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INTRODUCTION.

This REVIEW is based on reports for July, 1892, from 2,900 regular and voluntary observers. These reports are classified as follows: 166 reports from Weather Bureau stations; 47 reports from United States Army post surgeons; 1,916 monthly reports from state weather service and voluntary observers; 217 reports through the Central Pacific Railway Company;

523 marine reports through the co-operation of the Hydrographic Office, Navy Department; 31 reports from Canadian stations; marine reports through the "New York Herald Weather Service;" monthly reports from local weather services established in all states and territories; and international simultaneous observations. Trustworthy newspaper extracts and special reports have also been used.

CHARACTERISTICS OF THE WEATHER FOR JULY, 1892.

The period of persistent and exceptionally high temperature during the second and third decades was a notable feature of the month. From the 18th to the 24th the daily maximum temperature in Kansas and Nebraska was 100° or above. In the Atlantic coast and Southern States the period of greatest heat extended from the 24th to the 28th. At Philadelphia, Pa., a maximum temperature of 101° was recorded on the 26th, and 99° was the maximum reading at Baltimore, Md., and Washington, D. C. On the 27th the temperature reached 100° at Lynchburg, Va. These temperatures were the highest ever recorded at the respective stations for the third decade of July. In the east Gulf states excessive rainfall damaged crops, while in parts of New England, the Ohio Valley, and the interior of Texas vegetation was injured by drought.

TEMPERATURE.

The mean temperature was generally below the normal, the most marked deficiency being shown in the south Atlantic and Gulf states, and in Oregon and Washington, where it was more than 3°. In the middle and east Gulf states the month was exceptionally cool, and at points in that section the mean temperature was the lowest ever noted for July. A notable excess in temperature occurred only in the Lake Superior and Gulf of Saint Lawrence districts, where the mean was 2° to 3° above the July average. Light frost damaged vegetation about Carson City, Nev., on the 11th. Frost was reported in the Lehigh Valley, Pa., on the 18th. Vegetation about Havre, Mont., was touched by frost on the 28th.

PRECIPITATION.

More than the usual amount of precipitation was reported in the east Gulf states, along the Virginia and south Atlantic coasts, and in the upper Mississippi and upper Missouri val-

leys. At points in the east Gulf states, the upper Mississippi valley, and North Dakota the monthly precipitation was the greatest ever reported for July. In New England, eastern Nebraska, eastern Kansas, and the Southwest there was a marked deficiency in precipitation. At points in New England, Pennsylvania, and the interior of Texas the monthly precipitation was the least ever noted for July.

STORMS.

The occurrence of local storms was noted most frequently in Michigan and Iowa. The more destructive storms of the month occurred in Ohio, Indiana, Illinois, and Iowa on the 2d, a tornado being reported at Tocsin, Ind., and another near Davenport, Iowa; in Minnesota and North Dakota on the 11th; in Wisconsin on the 12th; in Ohio, Illinois, and North Dakota on the 13th, a tornado occurring at Springfield, Ohio; in South Dakota on the 19th, exceptionally heavy gales being reported, and a tornado occurring at Gettysburg, S. Dak.; in Illinois on the 20th; in North Dakota on the 22d; and in northern Ohio on the 24th.

FLOODS.

The Mississippi River subsided slowly, and at the close of the month was above the danger-line at New Orleans, La., only. In the early part of the month some damage was caused about New Orleans by flood. Streams overflowed their banks in western Illinois. In Mississippi and Alabama high water in the Tombigbee, Warrior, Alabama, Coosa, and Pearl rivers caused considerable loss of property and crops.

AUORAS.

The widely-observed and exceptionally brilliant auroral display of the 16th was an interesting and unusual feature of the month.

ATMOSPHERIC PRESSURE (expressed in inches and hundredths).

The distribution of mean atmospheric pressure for July, 1892, as determined from observations taken daily at 8 a. m. and 8 p. m. (75th meridian time), is shown on Chart II by isobars.

In July the normal pressure is above 30.05 on the north

Pacific coast and over the east Gulf states and Florida. Over the west part of the southern plateau region the pressure is below 29.85, and along the extreme northern border of the country east of the 110th meridian the normal values are below 29.90. In July there is usually an increase of pressure, except in extreme northeast and northwest parts of the country,

the most marked increase occurring between the Mississippi River and the Rocky Mountains, where it exceeds .05.

In July, 1892, the mean pressure was highest over the Florida Peninsula and along the Georgia and South Carolina coasts, where it was above 30.15, and the mean readings were above 30.10 east of the Mississippi and south of the Ohio rivers and along the immediate north Pacific coast. The mean pressure was lowest in Saskatchewan and over the west part of the southern plateau region, where it fell to or below 29.80, and it was below 29.90 in the lower Saint Lawrence valley, over adjoining parts of Montana and the Dakotas, and over west parts of the middle and southern plateau regions.

A comparison of the pressure chart for July, 1892, with that of the preceding month shows a general increase of pressure, a slight decrease being shown only in the lower Saint Lawrence valley, in adjoining parts of Montana and North Dakota, in the middle Saskatchewan valley, and in the interior of Oregon and northern California. The greatest increase of mean pressure occurred over the southern lake region and thence to the Gulf coast and the southeast slope of the Rocky Mountains, where it was more than .10.

The mean pressure was above the normal, except over eastern Montana and the western Dakotas, where the mean values were slightly below the normal. The most marked departure above the normal pressure was noted in the middle and south Atlantic states, where it exceeded .10, and the departure above the normal was more than .05 east of the Mississippi River and along the Pacific coast north of the 40th parallel.

HIGH AND LOW AREAS.

The paths of areas of high and low pressure over the United States and Canada during July, 1892, are shown on Charts IV and I, respectively, and some of the prominent characteristics of the areas are given in the table at the end of this chapter.

HIGH AREAS.

Four high areas appeared, the average number traced for July during the last 18 years being 5.8. Two of the high areas of the current month advanced from the north Pacific Ocean, one first appeared over the western Saskatchewan valley, and one developed over the Lake region. The high areas from the north Pacific coast advanced south of east to the middle Atlantic states, from which region one passed to the Gulf of Saint Lawrence and the other recurved southward and westward over the Gulf of Mexico. The high area from the Saskatchewan Valley moved southeastward and disappeared by an increase of pressure over the middle Mississippi valley on the 31st. The high area from the Lake region moved southward along the Atlantic coast and thence westward over the Gulf of Mexico. The average velocity of the high areas was 24 miles per hour. The following is a description of the high areas traced:

I.—Occupied the north Pacific coast at the opening of the month, with pressure above 30.30. During the 2d this high area advanced south of east over the northern plateau region, and on the 3d reached the lower Missouri valley, attended by the lowest temperature of the month at points in the Dakotas and Minnesota. Moving eastward along the 40th parallel the center reached the Alleghany Mountains the evening of the 4th, with the lowest temperature of the month in West Virginia. By the morning of the 5th the high area had passed northeastward to New England, with pressure above 30.30, moved thence eastward off the New England coast, and the morning of the 6th had apparently reached the Gulf of Saint Lawrence. On the 5th the lowest temperature of the month was noted at points in northern New England.

Ia.—During the 5th high area I apparently divided, and at the evening report this high area was central north of Lake Erie where it remained nearly stationary until the morning of the 6th, with pressure rising to 30.50. The morning of the 7th the high area was central over New York, and during the day it shifted position southward over east Pennsylvania, and

on the 8th it passed southward to the Carolinas, where the lowest temperature of the month was noted. During the 9th and 10th the high area moved southward off the south Atlantic coast, and by the 11th had moved westward over the Florida Peninsula, with the lowest temperature of the month at Titusville, Fla.

II.—Advanced from the north Pacific coast, and the morning of the 14th was central over western Montana with pressure above 30.10. During the 15th the center advanced to Minnesota with pressure above 30.20, and during the 16th passed to the southern extremity of Lake Michigan. By the night of the 17th the high area had moved to the eastern Virginia coast, and the lowest temperature of the month occurred on that date at points in the lower lake region and along the New England and New Jersey coasts. Moving southward off the south Atlantic coast during the 18th, the center apparently passed westward and occupied the Gulf of Mexico by the morning of the 20th.

III.—Appeared over Alberta the morning of the 27th, with pressure above 30.20, and passed thence southeastward to the middle Missouri valley by the 29th. The night of the 29th this high area apparently divided, one part passing to the upper lake region, where it disappeared by a decrease of pressure after the 30th, the other moved southeastward over Missouri and Arkansas during the 30th and disappeared by a decrease of pressure over the lower Mississippi valley on the 31st.

LOW AREAS.

The low areas of July advance eastward over the United States at an average velocity of 25 miles per hour. The average velocity for May, June, and July being the lowest of the year. The storms of July generally appear on the middle and northeast slopes of the Rocky Mountains and pass over or north of the Lake region and Saint Lawrence Valley to Newfoundland. An average of less than one storm per month advances from the north Pacific coast and traverses the continent.

The tracks of 11 areas of low pressure are plotted on Chart I for July, 1892, the average number traced for July during the last 20 years being 9.5. The average velocity of the low areas was 30 miles per hour. Eight of the low areas first appeared in the Saskatchewan Valley, and 3 on the northeast slope of the Rocky Mountains. The storms from the Saskatchewan Valley generally moved eastward north of the Lake region and the Saint Lawrence Valley. One of these storms passed southeastward to the upper Mississippi valley and thence over the lower lake region and New England. Two of the storms from the northeast slope of the Rocky Mountains passed north of the Lake region and the Saint Lawrence River and moved southward along the eastern slope of the Rocky Mountains.

A description of the more important local storms that attended the low areas is given under "Local storms." The following is a description of the low areas of the month.

I.—Was central north of Montana at the opening of the month, with pressure below 29.50. By the evening report of the 1st the center had advanced to South Dakota, attended by brisk to high winds and rain in the Missouri Valley. During the 2d the storm-center advanced to northern Illinois; the rain area extended over the Ohio Valley and the Lake region, high winds occurred from the Missouri Valley over southern Lake Michigan, and thunderstorms occurred in the upper Mississippi valley. Moving rapidly eastward the center reached New Brunswick the night of the 3d, with pressure 29.50; rain fell generally from the Missouri and middle Mississippi valleys to the middle Atlantic and New England coasts, and high winds were reported in the lower lake region and along the Atlantic coast north of Hatteras, N. C. The morning report of the 4th showed this low area central over the Gulf of Saint Lawrence, with pressure below 29.50. On this date the weather was clearing in the middle Atlantic and New England states, and northwesterly gales occurred along the New England coast.

II.—On the 4th there was a marked decrease of pressure in the western Saskatchewan valley, and by the night of the 5th this low area was central north of Montana, with pressure below 29.50. The morning of the 6th the storm was central over eastern Montana, and passed thence to eastern Assiniboia by the night report, with rain in Montana, and high winds in the middle and upper Missouri valleys. During the 7th the center of disturbance advanced to Manitoba and passed thence northeastward beyond the region of observation. On that date the rain area extended over the Dakotas and eastern Colorado, and high winds were noted from Manitoba to Nebraska.

III.—Appeared over the western Saskatchewan valley the morning of the 9th and remained nearly stationary in that region until the night report, with pressure below 29.50, and rain over northern Montana. During the 10th the storm passed eastward and disappeared north of Manitoba without evidence of marked strength.

IV.—Apparently developed on the northeast slope of the Rocky Mountains and the morning of the 11th was central over southeastern Montana, with pressure below 29.70. By the evening report of the 11th the center had advanced to South Dakota, with pressure 29.60; rain fell over Montana and North Dakota, and high winds were noted in eastern Montana and the Dakotas. The morning report of the 12th showed this low area central north of Lake Superior, from which position it passed eastward to the region northeast of Georgian Bay by 8 p. m., with rain in the upper lake region, and high winds over eastern Lake Superior. During the 13th the center advanced north of the lower Saint Lawrence river, the rain area extended from the upper Ohio valley over the lower lake region and the interior of New England, and the weather was clearing in the upper lake region.

V.—Appeared over the western Saskatchewan valley on the 12th, with pressure below 29.70. The morning of the 13th a trough of low pressure extended from Assiniboia to northeast Utah, and low area Va developed over eastern Wyoming. On this date local storms occurred in the middle Missouri valley, and tornadoes were reported in the vicinity of North Platte, Nebr. The morning of the 14th the low areas had united over South Dakota, and the storm-center passed thence to the region north of Lake Superior by the evening report, with rain over the Dakotas and Minnesota, and high northwesterly winds over the Dakotas and Nebraska. The morning of the 15th the storm was central over eastern Upper Michigan, with pressure below 29.70. During the day it passed eastward to the region north of Lake Ontario, with pressure 29.50 and rain

and northwest gales over the Great Lakes, and thunderstorms in the lower lake region. The morning of the 16th the storm was central over the lower Saint Lawrence valley, with pressure below 29.40; rain fell in the middle Atlantic and New England states, and northwest gales occurred over the lower lakes. By the evening report of the 16th the storm had disappeared over the Gulf of Saint Lawrence.

VI.—Appeared over the western Saskatchewan valley on the 17th, with pressure below 29.50, and rain in areas in the Dakotas and Nebraska. During the 18th the center passed to the region north of Lake Superior, rain fell from the Missouri Valley over the western northern lake region, and heavy rains were reported in the Gulf States. By the night of the 19th the center had advanced to the lower Saint Lawrence valley, rain was followed by clearing weather in the Lake region, and fresh southwest winds prevailed over the lower lakes. During the 20th this low area disappeared north of the Gulf of Saint Lawrence.

VII.—Advanced eastward from Alberta, and the morning of the 20th was central north of North Dakota and a trough of low pressure extended thence to eastern Colorado. On this date thunderstorms occurred in the Missouri and upper Mississippi valleys, and thunderstorms were also reported on the south Atlantic coast. During the 21st the storm-center advanced eastward north of Lake Superior, and at the night report was central north of Georgian Bay. On that date thunderstorms occurred in the upper Mississippi valley. By the morning of the 22d the center of disturbance had reached the lower Saint Lawrence valley; on that date thunderstorms were reported in western New York in the afternoon.

VIII.—Advanced southeastward from Alberta, and the evening of the 22d was central north of eastern Montana, with pressure below 29.40. During the 23d the center passed eastward to the region north of Lake Superior and reached the lower Saint Lawrence valley by the night of the 24th, its passage being attended by thunderstorms and southwest gales in the lower lake region.

IX.—Appeared over the northern Saskatchewan valley the night of the 23d, with pressure below 29.40. During the 24th the center advanced to Manitoba, and during the 25th passed north of Lake Superior, with thunderstorms and heavy rain over the northern lake region. By the night of the 26th the center had reached the Gulf of Saint Lawrence, its passage being attended by thunderstorms in the lower lake region, the Ohio Valley, and Pennsylvania.

X.—Apparently advanced from the Saskatchewan Valley, and the evening of the 25th was central over eastern Montana,

Tabulated statement showing principal characteristics of areas of high and low pressure.

Barometer.	First observed.			Last observed.			Duration.	Velocity per hour.	Maximum pressure change in 12 hours, maximum abnormal temperature change in 12 hours, and maximum wind velocity.											
	Date.	Lat. N.	Long. W.	Lat. N.	Long. W.				Station.	Rise.	Date.	Station.	Fall.	Date.	Station.	Direction.	Miles per hour.	Date.		
High areas.		°	°	°	°	Days.	Miles.			Inch.										
I.....	2	47	125	49	61	4-0	39		Eastport, Me.....	.56	4	Miles City, Mont.....	24	1	Amarillo, Tex.....	n.	24	3		
II.....	5	43	82	28	82	5-5	15		Toronto, Ont.....	.16	6	Yarmouth, N. S.....	10	7	Kittyhawk, N. C.....	w.	44	16		
III.....	14	47	114	29	83	5-5	25		Rockliffe, Ont.....	.42	16	Father Point, Quebec.....	22	16	Fort Canby, Wash.....	s.	36	12		
Mean.....	27	46	113	36	88	4-0	21		Miles City, Mont.....	.40	27	Valentine, Nebr.....	22	27	Rapid City, S. Dak.....	nw.	26	29		
										.38			19				32			
Low areas.										Fall.			Rise.							
I.....	1	50	109	48	63	3-0	36		Concordia, Kans.....	.44	1	Eastport, Me.....	12	3	Kearney, Nebr*.....	sw.	54	1		
II.....	5	51	110	52	101	2-0	19		Calgary, N. W. T.....	.34	4	Salt Lake City, Utah.....	17	4	Helena, Mont.....	sw.	54	4		
III.....	9	51	111	53	102	1-5	15		Miles City, Mont.....	.50	8	Swift Current, N. W. T.....	17	9	Winnemucca, Nev.....	sw.	36	9		
IV.....	11	45	107	50	68	2-0	42		Duluth, Minn.....	.24	11	Prince Arthur, Ont.....	17	11	Huron, S. Dak.....	nw.	48	12		
V.....	12	52	114	49	67	3-5	32		Kingston, Ont.....	.38	15	Pueblo, Colo.....	16	13	Detroit, Mich.....	nw.	44	15		
VI.....	17	58	114	50	70	2-5	33		Swift Current, N. W. T.....	.48	16	Spokane, Wash.....	18	17	Kittyhawk, N. C.....	sw.	36	20		
VII.....	20	53	103	51	69	2-0	32		Calgary, N. W. T.....	.40	19	Calgary, N. W. T.....	22	19	Huron, S. Dak.....	w.	60?	20		
VIII.....	27	52	107	50	62	2-0	44		do.....	.46	21	Rapid City, S. Dak.....	16	22	Cleveland, Ohio.....	nw.	54	24		
IX.....	23	54	106	51	63	3-0	26		Medicine Hat, N. W. T.....	.30	23	Rochester, N. Y.....	16	24	Huron, S. Dak.....	w.	56	25		
X.....	25	47	107	35	104	2-0	27		Huron, S. Dak.....	.20	24	Miles City, Mont.....	16	25	Denver, Colo.....	w.	48	26		
XI.....	28	51	114	50	81	3-0	20		Calgary, N. W. T.....	.38	28	Qu'Appelle, N. W. T.....	16	29	Pueblo, Colo.....	nw.	32	30		
Mean.....										.37			17				48			

* W., 90, Mount Washington, N. H., 3d.

with pressure below 29.70. During the 26th the storm apparently divided, one part passing to Manitoba and the other to South Dakota. The morning of the 27th a trough of low pressure extended from Lake Superior to Colorado with 2 cyclonic centers, one north of Lake Superior and the other over Nebraska. On this date thunderstorms occurred in Nebraska, heavy rains were noted in Wisconsin and Ohio, and high westerly winds prevailed over the Lake region. By the night of the 27th the cyclonic area over Nebraska had been forced southward by an area of high pressure from the northwest and it apparently disappeared by an increase of pressure over western Texas and New Mexico. The storm central north of Lake Superior advanced to the region northeast of Georgian Bay by the night of the 28th, attended by thunderstorms in New York and the Ohio Valley, and heavy rain at points in the upper lake region. The storm remained

nearly stationary over the Saint Lawrence Valley during the 29th, with rain from the upper Mississippi valley over the middle Atlantic and New England states, and thunderstorms in New York state. By the morning of the 30th the center had disappeared over the Gulf of Saint Lawrence, rain continued in the middle Atlantic and New England states, and thunderstorms were reported in northern Virginia.

XI.—Appeared over Alberta the night of the 28th, with pressure 29.70, and during the 29th advanced eastward north of Montana, with pressure below 29.60, and rain and thunderstorms in the middle Rocky Mountain region. During the 30th the storm-center advanced eastward over Manitoba, without evidence of marked strength, and during the 31st passed to the region east of Lake Superior, with rain in the Atlantic coast states, and thunderstorms at points in the middle Atlantic coast states.

NORTH ATLANTIC STORMS FOR JULY, 1892 (pressure in inches and millimeters; wind-force by Beaufort scale).

The paths of storms that appeared over the west part of the north Atlantic Ocean during July, 1892, are shown on Chart I. These paths have been determined from reports of observations by shipmasters received through the co-operation of the Hydrographic Office, Navy Department, and the "New York Herald Weather Service."

In July there is usually an increase of pressure over the north Atlantic Ocean, except off the middle Atlantic and New England coasts and over eastern and extreme northern parts of the ocean. The increase of pressure is small, less than .05 inch, while from the British Isles northward the decrease is .05 to .10 inch.

The storms of July advance eastward over the north Atlantic at an average velocity of 19 statute miles per hour, and an average of 1.8 storm traverses the ocean from coast to coast. The principal track of July storms is traced from Newfoundland to a point west of Scotland, where it divides, one branch passing northeastward along the coast of Norway, one eastward over the North and Baltic seas, and one southeastward over Great Britain and France.

The storms of the current month were of small intensity, and no storms of tropical origin appeared within the region of observation. Four of the storms traced apparently advanced from the American to the European coasts. On the 3d a cyclonic depression moved eastward from the Labrador coast and reached mid-ocean on the 4th, with central pressure about 29.40 (747), and westerly gales of force 7 to 10. By the 5th this storm had advanced north of the British Isles, with pressure about 29.50 (749). During the 4th a storm of marked strength, low area I, moved east-northeast over the Gulf of Saint Lawrence, with pressure below 29.50 (749), and on the 5th was central north of the Banks of Newfoundland, with west to north gales of force 9 in the trans-Atlantic tracks between the 40th and 50th meridians. Moving north of east this storm passed north of the British Isles during the 8th, its passage being attended by strong northwest gales between the 20th and 30th meridians on the 6th.

On the 8th a storm apparently moved eastward from Labrador and reached mid-ocean on the 9th, with pressure about 29.50 (749), and westerly gales of force 9 to 10 between the 30th and 40th meridians. During the next 24 hours this storm increased in energy, and pressure below 29.40 (747) and northwest gales of force 10 were noted between the 20th and 30th meridians. During the 11th and 12th the storm-center remained nearly stationary west of Ireland, with northwest gales of force 9 to 10 east of the 20th meridian. By the 13th the center of disturbance had passed southeastward to the Bay of Biscay, and by the 14th had moved eastward over the continent of Europe.

On the 12th a storm appeared central north of the Banks of Newfoundland, and passed thence to mid-ocean, where pressure falling to about 29.70 and fresh gales were reported for the 13th and 14th. By the 16th the center of disturbance had

advanced south of Ireland, after which it disappeared to the eastward. During the 14th low area IV moved eastward over northern Newfoundland and occupied the region north of the Grand Banks on the 15th, after which the center apparently recurved westward and united with low area V. Low area V crossed the Gulf of Saint Lawrence and northern Newfoundland on the 17th, and passed thence rapidly northeastward beyond the region of observation. Low area VII moved eastward north of the Saint Lawrence River during the 22d, and the morning of the 23d was central over or near Labrador. This storm apparently remained stationary north of Newfoundland and the Grand Banks until the 27th, when it was joined by low area IX. During the next three days the pressure continued low over the western part of the ocean, with fresh south to west gales west of the 40th meridian. The month closed with high pressure and generally fine weather from coast to coast.

OCEAN ICE IN JULY.

The following table shows the southern and eastern limits of the region within which icebergs or field ice were reported for July during the last 10 years:

Southern limit.			Eastern limit.		
Month.	Lat. N.	Long. W.	Month.	Lat. N.	Long. W.
July, 1883.....	42 42	49 57	July, 1883.....	46 47	45 44
July, 1884.....	46 24	50 02	July, 1884.....	48 36	46 28
July, 1885.....	42 14	48 30	July, 1885.....	48 00	44 00
July, 1886.....	42 59	49 18	July, 1886.....	45 52	34 30
July, 1887.....	43 30	50 05	July, 1887.....	52 04	41 16
July, 1888.....	46 30	54 00	July, 1888.....	47 40	50 10
July, 1889.....	44 49	47 45	July, 1889.....	45 50	40 00
July, 1890.....	41 25	47 30	July, 1890.....	50 06	38 45
July, 1891.....	43 16	49 45	July, 1891.....	47 02	48 00
July, 1892.....	43 04	50 17	July, 1892.....	48 00	44 40
Mean.....	43 44	49 25	Mean.....	48 00	44 00

*An iceberg and field ice. †On the 10th a small piece of ice was reported in N. 48° 33', W. 24° 11'.

The limits of the region within which icebergs or field ice were reported for July, 1892, are shown on Chart I by ruled shading.

The southernmost ice reported, an iceberg observed on the 28th in the position given, was about 1° south of the average southern limit, and the easternmost ice reported, a large iceberg noted on the 20th in the position given in the table, was nearly 1° west of the average eastern limit of Arctic ice for July. The ice of the current month was noted most frequently in and east of the Straits of Belle Isle and off the southeast coast of Newfoundland.

OCEAN FOG IN JULY.

The limits of fog belts west of the 45th meridian, as reported by shipmasters, are shown on Chart I by dotted shading.

More than the usual amount of fog was reported. Near the Banks of Newfoundland fog was reported on 26 dates; between the 55th and 65th meridians on 18 dates; and west of the 65th meridian on 17 dates. Compared with the corresponding month of the last 4 years the dates of occurrence of fog east of the 55th meridian numbered 3 greater than

the average; between the 55th and 65th meridians 4 greater than the average; and west of the 65th meridian 8 greater than the average. The fog noted by shipmasters and that reported by observers of the Weather Bureau on the New England and middle Atlantic coasts generally attended the advance or passage of general storms.

TEMPERATURE OF THE AIR (expressed in degrees, Fahrenheit).

The distribution of mean temperature over the United States and Canada for July, 1892, is exhibited on Chart II by dotted isotherms. In the table of miscellaneous meteorological data the monthly mean temperature and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for mean temperature and departure from the normal show, respectively, the average for the several districts. The normal for any district may be found by adding the departure to the current mean when the temperature is below the normal and subtracting when above. The monthly mean temperature for regular stations of the Weather Bureau represents the mean of the maximum and minimum temperatures.

The mean temperature was highest in the Gila and lower Colorado valleys, where it was above 95, and the mean readings were above 85 in adjoining parts of Arizona and southern California, and in the lower Rio Grande valley. Over the Florida Peninsula, along the South Carolina, Georgia, and Gulf coasts, in Louisiana, Texas, and Indian and Oklahoma territories, over the southwestern plateau region, and in southeastern California the mean values were above 80. The mean temperature was lowest along the immediate Pacific coast north of San Francisco, Cal., where it was below 55, and it was below 60 in Calgary, in the mountains of central Colorado, in the lower Saint Lawrence valley, and at Yarmouth, N. S.

DEVIATIONS FROM NORMAL TEMPERATURE.

The following table shows for certain stations, as reported by voluntary observers, (1) the normal temperature for July for a series of years; (2) the length of record during which the observations have been taken, and from which the normal has been computed; (3) the mean temperature for July, 1892; (4) the departure of the current month from the normal; (5) and the extreme monthly mean for July during the period of observation and the years of occurrence:

State and station.	(1) Normal for the month of July.	(2) Length of record.	(3) Mean for July, 1892.	(4) Departure from normal.	(5) Extreme monthly mean for July.			
					Highest.	Year.	Lowest.	Year.
<i>Arizona.</i>	°	Years	°	°	°		°	
Fort Apache.....	75.7	20	74.8	- 0.9	83.6	1877	70.3	1883
Fort Mohave.....	95.5	21	93.1	- 2.4	100.1	1873	90.1	1888
Whipple Barracks.....	75.3	21	73.9	- 1.4	81.7	1878	70.4	1883, 1891
<i>Arkansas.</i>								
Lead Hill.....	81.3	10	.....	.....	84.2	1888	75.2	1882
<i>California.</i>								
Fort Bidwell.....	71.6	21	66.9	- 4.7	75.9	1874	63.9	1884
Riverside.....	77.3	10	.....	.....	79.4	1883	75.9	1889
<i>Colorado.</i>								
Las Animas.....	75.7	9	76.0	+ 0.3	79.1	1890	73.0	1891
<i>Florida.</i>								
Merritts Island.....	80.7	10	81.3	+ 0.6	82.8	1891	78.5	1886
<i>Georgia.</i>								
Forsyth.....	81.9	18	79.2	- 2.7	85.7	1881	78.3	1882
<i>Idaho.</i>								
Boise Barracks.....	74.0	18	70.3	- 3.7	79.6	1873	69.4	1884
Fort Sherman.....	67.3	8	65.3	- 2.0	74.2	1889	62.6	1884
<i>Illinois.</i>								
Centralia.....	79.0	11	.....	.....	88.0	1887	73.0	1882
<i>Indiana.</i>								
Lafayette.....	73.4	10	73.9	+ 0.5	79.8	1887	69.0	1882
<i>Indian Territory.</i>								
Fort Supply.....	80.6	13	79.6	- 1.0	85.8	1874	76.4	1891
<i>Iowa.</i>								
Cresco.....	70.9	19	69.6	- 1.3	75.2	1874	65.1	1891

Deviations from normal temperature—Continued.

State and station.	(1) Normal for the month of July.	(2) Length of record.	(3) Mean for July, 1892.	(4) Departure from normal.	(5) Extreme monthly mean for July.			
					Highest.	Year.	Lowest.	Year.
<i>Kansas.</i>	°	Years	°	°	°		°	
Eureka Ranch.....	81.4	9	76.6	- 4.8	86.2	1890	76.3	1891
Independence.....	79.5	20	79.7	+ 0.2	85.9	1879	74.7	1891
Salina.....	81.3	9	79.0	- 2.3	86.3	1890	76.2	1891
<i>Louisiana.</i>								
Grand Coteau.....	82.5	7	79.0	- 3.5	85.4	1884	79.0	1892
<i>Maine.</i>								
Orono.....	66.9	22	68.6	+ 1.7	71.0	1887	64.2	1884
<i>Maryland.</i>								
Cumberland.....	72.1	21	72.9	+ 0.8	77.7	1889	70.3	1888
<i>Michigan.</i>								
Kalamazoo.....	72.2	15	72.6	+ 0.4	77.8	1885	67.2	1891
<i>Missouri.</i>								
Sedalia.....	78.6	12	76.5	- 2.1	82.8	1888	71.2	1891
<i>Montana.</i>								
Fort Custer.....	70.7	11	.....	.....	74.2	1890	69.8	1884
<i>Nebraska.</i>								
Fort Robinson.....	73.8	9	71.7	- 1.1	78.1	1886	66.9	1891
Genoa (near).....	74.7	10	74.0	- 0.7	78.6	1890	69.8	1891
<i>Nevada.</i>								
Brown.....	83.5	20	84.1	+ 0.6	89.1	1873	79.4	1881
Carson City.....	71.5	14	68.9	- 2.6	73.7	1875	68.9	1892
<i>New Hampshire.</i>								
Hanover.....	69.3	20	67.4	- 1.9	72.1	1878	66.7	1884
<i>New Mexico.</i>								
Deming.....	86.1	10	90.6	+ 4.5	90.6	1892	80.7	1890
Fort Wingate.....	73.3	21	70.4	- 2.9	77.8	1873	68.1	1888
<i>New York.</i>								
Cooperstown.....	68.3	21	66.6	- 1.7	73.0	1887	64.5	1884
Plattsburg Barracks.....	69.6	20	68.8	- 0.8	73.2	1887	65.2	1891
<i>North Carolina.</i>								
Lenoir.....	74.5	19	72.9	- 1.6	77.7	1877	66.4	1884
<i>Oklahoma.</i>								
Fort Reno.....	80.8	9	79.8	- 1.0	84.9	1887	76.2	1891
Fort Sill.....	82.3	21	80.0	- 2.3	86.0	1871	77.2	1880
<i>Oregon.</i>								
Bandon.....	57.7	8	57.0	- 0.7	59.5	1888	54.6	1887
Eola.....	64.6	21	60.7	- 3.9	70.3	1889	59.6	1888
<i>Pennsylvania.</i>								
Dyberry.....	67.9	19	66.6	- 1.3	72.6	1887	63.0	1891
Grampian Hills.....	70.5	21	70.3	- 0.2	76.8	1887	65.4	1891
Wellboro.....	69.4	13	64.5	- 4.9	76.1	1881	60.4	1891
<i>South Carolina.</i>								
Statesburg.....	78.3	11	76.4	- 1.9	84.0	1881	74.6	1891
<i>South Dakota.</i>								
Fort Sully.....	74.8	21	75.4	+ 0.6	80.2	1871	70.9	1884
<i>Texas.</i>								
Austin.....	84.0	19	84.5	+ 0.5	88.3	1879, 1884	82.0	1877
Silver Falls.....	80.1	6	81.6	+ 1.5	83.9	1888	74.6	1887
<i>Utah.</i>								
Terrace.....	82.0	17	83.5	+ 1.5	89.3	1874	77.6	1875
<i>Vermont.</i>								
Stratford.....	69.2	19	68.4	- 0.8	73.5	1887	65.7	1891
<i>Virginia.</i>								
Dale Enterprise.....	75.8	12	75.3	- 0.5	83.0	1887	71.5	1884
<i>Washington.</i>								
Fort Townsend.....	61.6	18	58.4	- 3.2	66.1	1875	58.4	1892
<i>West Virginia.</i>								
Parkersburg.....	78.1	11	72.2	- 5.9	87.0	1881	68.9	1886
<i>Wisconsin.</i>								
Embarrass.....	71.0	21	70.4	- 0.6	74.7	1874	65.5	1891
Madison.....	71.8	17	71.6	- 0.2	75.2	1885	66.6	1891
<i>Wyoming.</i>								
Fort Washakie.....	69.6	7	67.7	- 1.9	73.7	1886	65.4	1891

DEPARTURES FROM NORMAL TEMPERATURE.

The mean temperature was below the normal, except along the northern border of the country east of the 110th meridian, in New England, eastern New York, and eastern Pennsylvania, and over east parts of the middle and southern plateau regions. The most marked departure below the normal temperature was noted in North Carolina, South Carolina, at Vicksburg, Miss., and in the valley of the Columbia River, where it was more than 3, and the mean temperature was 2 to 3 lower than usual generally east of the Mississippi and south of the Ohio rivers, in Washington and Oregon, and along the

south Pacific coast. The greatest departure above the normal temperature was noted along the west coast of the Gulf of Saint Lawrence, where it exceeded 3, and the temperature was 2 higher than the average for the month over the northern lake region, and in the British Possessions north of North Dakota and eastern Montana. Over the east part of the middle and southern plateau regions the excess in temperature was slight.

YEARS OF HIGHEST MEAN TEMPERATURE FOR JULY.

At Eastport, Me., Deming, N. Mex., and Tucson, Ariz., the mean temperature for the current month was the highest on record for July. The highest mean temperature on record for July was noted on the south Pacific coast and in the Sacramento Valley in 1891; in the middle Mississippi and Ohio valleys and the lower lake region in 1887; and in the upper lake region in 1878.

YEARS OF LOWEST MEAN TEMPERATURE FOR JULY.

At Southport, N. C., Key West, Fla., Grand Coteau, La., Galveston, Tex., Carson City, Nev., and Walla Walla and Fort Townsend, Wash., the mean temperature for the current month was the lowest on record for July. The lowest mean temperature for July occurred generally in the central valleys, the Lake region, and Atlantic coast states north of the 35th parallel in 1892, and in the upper Missouri valley in 1884.

MAXIMUM TEMPERATURE.

At Eastport, Me., Block Island, R. I., New Haven, Conn., Philadelphia, Pa., Grand Haven, Mich., and Concordia, Kans., the maximum temperature for the current month was the highest ever noted for July. These high temperatures occurred during the warm weather of the latter part of the month, and, with the exception of Block Island and Concordia, were recorded on the 26th.

The highest mean temperature recorded at a regular station of the Weather Bureau was 112, at Yuma, Ariz., on the 1st. The temperature rose to 110 at Fresno, Cal., and was above 100 in areas in the middle Atlantic states, in a large area extending from northwestern Texas to the western Dakotas and eastern Montana, in the upper valley of the Columbia River, over the southern and southwestern plateau regions, and in the central valleys of California. The highest temperature reported by a voluntary observer was 120 in the Colorado Desert, Cal., and these reports show maximum temperature above 100 in all sections of the country, except New England, New York, the northern lake region, and along the Pacific coast. The lowest maximum temperature was noted along the immediate Pacific coast north of the 40th parallel, where it was below 70, and the maximum values were below 80 on the southeast New England coast.

MINIMUM TEMPERATURE.

At Lynchburg and Norfolk, Va., Kittyhawk, N. C., Charleston, S. C., Jacksonville, Fla., New Orleans, La., Cleveland, Sandusky, and Toledo, Ohio, Keokuk, Iowa, Leavenworth, Kans., Abilene, Tex., Fort Stanton, N. Mex., Havre, Mont., and Walla Walla, Wash., the minimum temperature for the current month was as low or lower than previously reported for July.

The lowest temperature reported by a regular station of the Weather Bureau in July, 1892, was 31 at Havre, Mont., on the 28th. The minimum fell to 37 at Baker City, Oregon, on the 23d, and to 38 at Northfield, Vt., on the 5th. Reports of voluntary observers show temperature below the freezing point at stations in North Dakota, New Mexico, and the eastern plateau region. The highest minimum temperature was noted over the southern half of the Florida Peninsula and along the west Gulf coast, where it was above 70, and the minimum readings were above 60 in the Southern States, in Arizona, and southeastern California.

RANGES OF TEMPERATURE.

The greatest daily ranges of temperature are shown in the table of miscellaneous meteorological data. The greatest

monthly ranges of temperature occurred over northern Montana and eastern Oregon, where they exceeded 60. From that region the monthly ranges decreased eastward to less than 40 along the immediate New England and middle Atlantic coasts, southeastward to less than 20 over southern Florida and along the west Gulf coast, southward to less than 40 over the southern plateau region, and westward to less than 20 along the immediate Pacific coast.

PERIODS OF HIGH TEMPERATURE.

The highest temperature of the month was noted in Arizona on the 1st, a maximum of 112 and 106 being noted at Yuma and Tucson, respectively. In the Sacramento Valley the temperature rose to 105, and at the evening report was 10 above the normal. This warm wave extended over the northeast slope of the Rocky Mountains during the 2d, reached the middle Missouri and extreme upper Mississippi valleys on the 3d, extended over the Ohio Valley and the eastern lake region during the 4th, and the New England states by the 5th, without causing marked temperature changes in the middle and south Atlantic states.

A marked rise in temperature occurred in the Pacific coast states on the 7th. During the 8th the warm wave extended over the northern part of the country to the Lake Superior region, and the highest temperature of the month, 89, was noted at Roseburg, Oregon. On the 9th the temperature rose in the Southwest, and on the 10th the warmer weather reached the Atlantic coast. On the 10th the temperature rose 10 to 12 over the Dakotas and Nebraska, and on the 11th the highest temperature of the month occurred in the Dakotas and western Minnesota. This warm wave reached the Atlantic coast states the night of the 12th.

On the 12th and 13th the temperature rose from the middle and southern plateau regions over the Dakotas, and on the 14th the highest temperature of the month, 100, was noted at Pueblo, Colo. On the 18th the temperature rose decidedly over the plateau region and thence to the middle Missouri valley, the warm wave extended over the Ohio Valley and the Lake region during the 19th, with temperature 10 to 17 above the normal in the western lake region, and reached the Atlantic coast on the 20th.

Unusually warm weather prevailed generally east of the Rocky Mountains from the 21st to 28th. The high temperature of this period was caused, not by well-marked warm waves from the West, but by continued southerly winds due to the distribution of atmospheric pressure, which was persistently low in the Northwest and high in the Southeast. A discussion of this warm period, together with the high temperature of the early part of August, will appear in the August, 1892, REVIEW.

PERIODS OF LOW TEMPERATURE.

The month opened with temperature 10 to 15 below the normal from the middle Atlantic and New England coasts over the middle Mississippi valley. On the 1st the temperature fell 10 to 20 over Montana. This cool wave extended over the middle-eastern slope of the Rocky Mountains during the 2d, with the lowest temperature of the month over the eastern part of the middle plateau region; there was also a decided fall in temperature in the upper lake region. By the night of the 3d the cool wave reached the Atlantic coast, with temperature 10 to 15 below the normal in the Ohio Valley and lower lake region, and the cooler weather extended over the Southern States during the 4th.

On the 5th the temperature fell 5 to 10 over the northern plateau region, and the lowest temperature of the month, 47, was noted at Portland, Oregon. During the 6th the cool wave overspread the plateau region and the northeast slope of the Rocky Mountains, and on the 7th reached the middle-eastern slope of the Rocky Mountains and the western Lake Superior region. The influence of this cool wave did not extend east of the Mississippi River. During the 9th and 10th a cool wave extended eastward from the Pacific coast and occupied

the western part of the middle plateau region the night of the 10th, with temperature 15 to 20 below the normal. On the 11th a fall of 20 occurred in the upper Missouri valley, and on the 12th the cool wave covered an area extending from Lake Superior to New Mexico. During the 13th the cooler weather extended over the Lake region and the Ohio Valley, and a slight fall in temperature occurred in the middle Atlantic and New England states.

A fall of 10 to 20 in temperature was shown in Alberta the morning of the 14th. On the 15th a marked fall in temperature occurred from the upper lake region to New Mexico, on the 16th the cool wave reached the Atlantic coast, and the lowest temperature of the month was noted at points in the middle Atlantic and New England states and the lower lake region on the 17th. During the 16th a cool wave overspread the plateau region and extended thence over the Northwest during the 17th. On the 20th a marked fall in temperature occurred in the upper Mississippi valley and the temperature continued cool in that region until the 21st. From the 22d to the 24th a cool wave advanced from Montana over the upper lake region.

On the 26th the temperature fell 10 to 20 in Montana and was more than 20 below the normal. This cool wave extended over the Missouri Valley during the 27th, with temperature 20 to 30 below the normal over South Dakota and Nebraska. On the 28th a cool wave occupied the western lake region and districts to the southwest, and the night of the 29th reached the middle Atlantic and New England coasts, ending the

period of high temperature which had prevailed in that region after the 21st.

TEMPERATURE, JANUARY TO JULY, INCLUSIVE.

For the period January to July, inclusive, the temperature averaged about normal in the middle Atlantic states, the Lake region, the extreme northwest, on the southeast slope of the Rocky Mountains, over the northern plateau region, and on the north Pacific coast. In New England and over the middle plateau region the mean was about 1 above the normal, and in the south Atlantic and east Gulf states, at Key West, Fla., in the Ohio Valley and Tennessee, the upper Mississippi and Missouri valleys, on the northeast and middle-eastern slopes of the Rocky Mountains, over the southern plateau region, and along the middle and southern Pacific coasts the mean was 1 to 2 below the normal temperature for the period named.

FROST.

Light frost was reported in the interior of New York on the 2d and 17th; in the interior of Pennsylvania on the 18th; in eastern Upper Michigan on the 16th; at points in North Dakota on the 3d, 28th, and 29th; in South Dakota on the 15th; and in Nebraska on the 28th. At Havre, Mont., a heavy frost occurred the morning of the 28th, damaging garden vegetables and corn. Light frost was reported in Utah from the 27th to the 31st; about Carson City, Nev., on the 11th; in northeastern Nevada on the 11th, 12th, 14th, and 24th; at Baker City, Oregon, on the 7th; in southeastern Washington on the 7th, 8th, 10th, 13th, 14th, and 23d; and at Olympia, Wash., on the 7th.

PRECIPITATION (expressed in inches and hundredths).

The distribution of precipitation over the United States and Canada for July, 1892, as determined from the reports of about 2,000 stations, is exhibited on Chart III. In the table of miscellaneous meteorological data the total precipitation and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for precipitation and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the precipitation is below the normal and subtracting when above.

The precipitation for July is usually greatest along the east Gulf and west Florida Peninsula coasts, where it exceeds 8.00, and the normal amount exceeds 6.00 along the Carolina coast, and in areas in adjoining parts of western Missouri and western Arkansas, and in southeastern Kansas. Over the greater part of the country east of the Mississippi River, and in large areas between the Mississippi River and the Rocky Mountains the average precipitation for July is 4.00 to 6.00. The greater part of California is practically rainless in July, and less than 1.00 is commonly recorded over the west part of the plateau region and along the Pacific coast south of Washington.

In July, 1892, the monthly precipitation was greatest in the middle and east Gulf states, where it generally exceeded 10.00, and in areas in that region it amounted to 15.00 and 20.00. The monthly amount was also in excess of 10.00 in small areas in the south Atlantic states, Tennessee, and the upper Mississippi valley. The monthly precipitation was 6.00 to 8.00 over the greater part of the country east of the Mississippi and south of the Ohio rivers, and in considerable areas in the middle and upper Mississippi valleys. In California and over the west parts of the middle and southern plateau regions little or no precipitation was reported, and less than 2.00 fell generally over the Rocky Mountain and plateau regions and in the Pacific coast states, save along the immediate north Pacific coast, where more than 2.00 was recorded.

DEPARTURES FROM NORMAL PRECIPITATION.

The monthly precipitation was in excess of the average

amount for July in the east Gulf states, along the Atlantic coast from Florida to Maryland, in the upper Mississippi and upper Missouri valleys, and along the immediate north Pacific coast. The greatest excess in precipitation occurred in Alabama and Mississippi, where it was 4.00 to 8.00; the excess was more than 4.00 in central Iowa and eastern Minnesota, and was more than 2.00 along the Carolina coast, in Virginia, and northwest North Dakota. In New England and the Canadian Maritime Provinces, southeastern New York, eastern Pennsylvania, the western lake region, in the middle Missouri valley and the Southwest, and generally over the Rocky Mountain and plateau regions and on the Pacific coast, except at Helena, Mont., and along the Washington coast, the monthly precipitation was deficient, the most marked deficiency being noted in Nova Scotia, at Eastport Me., New York, N. Y., Milwaukee, Wis., over the Florida Peninsula, and in eastern South Dakota, where it was more than 2.00.

Considered by districts the monthly precipitation averaged about normal in the middle and south Atlantic states, the lower lake region, on the northeast slope of the Rocky Mountains, over the middle plateau region, and along the middle and south Pacific coasts. In districts where the monthly precipitation was in excess the average percentage of the normal was about as follows: East Gulf states, 171; upper Mississippi valley, 148; northern plateau, 133; extreme northwest, 128; north Pacific coast, 116; and Ohio Valley and Tennessee, 115. In districts where the precipitation was deficient the percentage of the normal was about as follows: Key West, Fla., 38; southern plateau, 48; New England, 53; west Gulf states, 54; middle-eastern slope of the Rocky Mountains, 63; Missouri Valley, 67; upper lake region, 69; southeast slope of the Rocky Mountains, 84.

DEVIATIONS FROM AVERAGE PRECIPITATION.

The following table shows for certain stations, as reported by voluntary observers, (1) the average precipitation for July for a series of years; (2) the length of record during which the observations have been taken and from which the average has been computed; (3) the total precipitation for July, 1892; (4) the departure of the current month from

the average; (5) and the extremes for July during the period of observation and the years of occurrence:

State and station.	(1) Average for the month of July.	(2) Length of record.	(3) Total for July, 1892.	(4) Departure from average.	(5) Extremes for July.			
					Greatest.		Least.	
					Am't.	Year.	Am't.	Year.
<i>Arizona.</i>	<i>Inches.</i>	<i>Years.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>		<i>Inches.</i>	
Fort Apache.....	3.98	16	1.33	- 2.65	8.76	1878	0.14	1884
Fort Mohave.....	0.26	21	0.00	- 0.26	1.80	1881	0.00	†
Whipple Barracks.....	3.02	21	1.74	- 1.28	5.92	1875	0.55	1877
<i>Arkansas.</i>								
Lead Hill.....	4.90	10	3.14	- 1.76	11.60	1883	1.15	1888
<i>California.</i>								
Fort Bidwell.....	0.28	21	0.15	- 0.13	1.55	1891	0.00	1876, 1889
Riverside.....	T.	11			0.02	1888	0.00	
<i>Colorado.</i>								
Las Animas.....	1.79	9	1.09	- 0.70	4.65	1886	0.22	1890
<i>Florida.</i>								
Merritts Island.....	6.06	14	5.03	- 1.03	11.72	1884	0.86	1883
<i>Georgia.</i>								
Forsyth.....	4.63	18	7.52	+ 2.91	12.70	1887	0.32	1878
<i>Idaho.</i>								
Bois Barracks.....	0.18	18	0.00	- 0.18	0.60	1884	0.00	†
Fort Sherman.....	0.40	8	1.11	+ 0.71	1.67	1884	0.00	1882, 1883
<i>Illinois.</i>								
Centralia.....	3.29	14			7.80	1880	0.20	1881
<i>Indiana.</i>								
Lafayette.....	3.65	10	4.80	+ 1.15	5.81	1884	0.88	1887
<i>Indian Territory.</i>								
Fort Supply.....	4.08	13	1.55	- 2.53	9.34	1881	0.98	1886
<i>Iowa.</i>								
Oresco.....	4.32	19	3.10	- 1.22	12.70	1883	1.32	1890
<i>Kansas.</i>								
Independence.....	4.29	20	3.55	- 0.74	11.56	1875	0.77	1888
Salina.....	4.31	9	2.87	- 1.44	7.20	1885	0.30	1890
<i>Louisiana.</i>								
Grand Coteau.....	5.57	8	8.99	+ 3.42	12.36	1889	1.89	1888
<i>Maine.</i>								
Orono.....	3.46	22	1.99	- 1.47	7.11	1887	1.05	1886
<i>Maryland.</i>								
Cumberland.....	3.63	20	1.15	- 2.48	5.59	1887	1.01	1885
<i>Michigan.</i>								
Kalamazoo.....	3.49	16	1.80	- 1.69	6.50	1877	0.79	1887
<i>Missouri.</i>								
Sedalia.....	3.66	14	8.23	+ 4.57	8.23	1892	0.62	1886
<i>Montana.</i>								
Fort Custer.....	1.05	12			2.51	1880	0.06	1890
<i>Nebraska.</i>								
Fort Robinson.....	3.28	8	1.64	- 0.64	3.24	1891	0.74	1886
Genoa (near).....	4.33	16	2.44	- 1.89	7.45	1876	0.90	1877
<i>Nevada.</i>								
Brown.....	0.06	21	0.00	- 0.06	0.69	1876	0.00	*
Carson City.....	0.20	14	T.	- 0.20	1.25	1886	0.00	†
<i>New Hampshire.</i>								
Hanover.....	3.50	19	1.93	- 1.57	8.48	1877	1.66	1884
<i>New Mexico.</i>								
Deming.....	1.57	10	0.20	- 1.37	4.09	1890	0.18	1891
Fort Wingate.....	2.12	21	2.09	- 0.03	4.64	1883	0.26	1873
<i>New York.</i>								
Cooperstown.....	3.18	21	7.80	+ 4.62	7.80	1892	1.52	1888
Plattsburg Barracks.....	3.59	21	5.21	+ 1.62	9.18	1874	1.12	1888
<i>North Carolina.</i>								
Lenoir.....	4.76	19	4.90	+ 0.14	9.10	1886	1.70	1884
<i>Oklahoma.</i>								
Fort Reno.....	2.66	9	1.80	- 0.86	6.97	1891	0.82	1886
Fort Sill.....	2.62	21	1.52	- 1.10	8.21	1875	0.19	1871
<i>Oregon.</i>								
Randon.....	0.63	13	0.93	+ 0.30	1.90	1878	0.00	1885
Eola.....	0.45	20	0.50	+ 0.05	2.29	1884	0.00	*
<i>Pennsylvania.</i>								
Dyberry.....	4.76	21	2.91	- 1.85	9.28	1887	1.70	1885
Grampian Hills.....	5.12	21	2.41	- 2.71	7.33	1889	2.41	1892
Wellsboro.....	6.24	13	2.15	- 4.09	12.30	1880	2.15	1892
<i>South Carolina.</i>								
Statesburg.....	4.63	11	6.33	+ 1.70	8.34	1890	1.70	1884
<i>South Dakota.</i>								
Fort Sully.....	2.92	21	1.03	- 1.89	7.45	1878	0.25	1890
<i>Texas.</i>								
Austin.....	1.90	19	1.60	- 0.30	5.16	1874	0.00	1871, 1884
Silver Falls.....	2.05	5	1.43	- 0.62	3.06	1886	1.39	1889
<i>Utah.</i>								
Terrace.....	0.16	19	0.00	- 0.16	0.75	1874	0.00	†
<i>Vermont.</i>								
Stratford.....	4.55	19	0.91	- 3.64	6.77	1873	0.91	1892
<i>Virginia.</i>								
Dale Enterprise.....	4.58	13	3.14	- 1.44	7.05	1887	1.13	1883
<i>Washington.</i>								
Fort Townsend.....	0.82	17	0.90	+ 0.08	4.41	1888	0.01	1889
<i>West Virginia.</i>								
Parkersburg.....	5.51	7	3.99	- 1.52	10.33	1888	2.17	1885
<i>Wisconsin.</i>								
Embarrass.....	4.45	21	4.05	- 0.40	10.45	1885	0.85	1877
Madison.....	4.25	21	2.31	- 1.94	9.47	1881	0.79	1886
<i>Wyoming.</i>								
Fort Washakie.....	0.81	7	0.62	- 0.19	1.26	1886	0.29	1889

*Generally.

†Frequently.

PRECIPITATION, JANUARY TO JULY, 1892.

For the period January to July, inclusive, the precipitation averaged about normal in the south Atlantic and east Gulf states, the Ohio Valley and Tennessee, the extreme northwest,

on the middle-eastern slope of the Rocky Mountains, over the southern and northern plateau regions, and along the south Pacific coast. In the upper Mississippi valley and the lower lake region the precipitation was one-fourth to one-half greater, and in the middle Atlantic states, the upper lake region, the Missouri Valley, on the northeast slope of the Rocky Mountains, and over the middle plateau region, it was one-tenth to two-tenths greater than usual. In New England, at Key West, Fla., in the west Gulf states, on the southeast slope of the Rocky Mountains, and on the north and middle Pacific coasts the precipitation averaged 7 to 8 tenths of the normal amount for the period named.

YEARS OF GREATEST PRECIPITATION FOR JULY.

At Cooperstown, N. Y., Montgomery and Mobile, Ala., Chattanooga and Memphis, Tenn., Springfield, Ill., Sedalia, Mo., Des Moines, Iowa, and Fort Buford, N. Dak., the precipitation for the current month was the greatest ever noted for July. In the middle Mississippi and middle and lower Ohio valleys the greatest precipitation for July was noted in 1875; elsewhere the years of occurrence were irregular.

YEARS OF LEAST PRECIPITATION FOR JULY.

At Eastport, Me., Strafford, Vt., Grampian and Wellsboro, Pa., and San Antonio, Tex., the precipitation for the current month was the least ever reported for July. The areas of least precipitation for July in preceding years were confined to small areas or localities.

EXCESSIVE PRECIPITATION.

The following tables show, by states, the number of stations reporting monthly precipitation to equal or exceed 10.00; precipitation to equal or exceed 2.50 in 24 hours; and precipitation to equal or exceed 1.00 in 1 hour in July, 1892:

Monthly precipitation to equal or exceed 10.00.

State.	Number of stations.	State.	Number of stations.
Louisiana.....	19	North Carolina.....	3
Mississippi.....	15	Tennessee.....	3
Alabama.....	14	Florida.....	2
Georgia.....	5	Iowa.....	2
South Carolina.....	5	Minnesota.....	1

Precipitation to equal or exceed 2.50 in 24 hours.

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
Mississippi.....	16	4, 6-8, 7, 7-8, 8, 8-9, 9, 12, 13, 14, 15, 17-18, 23.	Texas.....	5	6, 17, 28-29, 31.
Missouri.....	16	2, 3, 7-8, 9, 13, 14, 16, 20, 28, 29.	Wisconsin.....	5	25, 27, 27-28.
Louisiana.....	15	4, 7, 8-9, 8-10, 9, 15, 16, 17, 17-18, 18, 25, 25-26, 25-27, 26, 27, 28.	Florida.....	4	5-6, 6-7, 8-10, 10, 25.
Iowa.....	14	1, 1-2, 2, 2-3, 21-22, 28, 28-29.	North Carolina.....	4	1, 6, 17, 19-20.
Alabama.....	12	5, 7, 7-8, 8, 8-9, 9, 9-10, 10, 15, 19, 24-25.	Nebraska.....	3	17, 27-28, 29.
Illinois.....	8	2, 2-3, 13.	New York.....	3	1-2, 2-3, 3-4, 22.
Minnesota.....	7	18, 25, 26-27.	Virginia.....	3	*1, 19, 31.
Indiana.....	6	2-3, 3.	Arkansas.....	2	3, 16.
Tennessee.....	6	3-4, 7-8, 14, 31.	Kansas.....	2	17, 27.
Georgia.....	5	4-5, 5, 5-6, 9-10, 17-18.	Michigan.....	2	3.
South Carolina.....	5	5, 5-6, 6, 17-18, 19-20, 30, 30-31, 31.	New Jersey.....	2	30, 31.
			West Virginia.....	2	19, 25.
			Arizona.....	1	25-26.
			Indian Territory.....	1	10.
			Kentucky.....	1	15.
			North Dakota.....	1	21-22.
			Ohio.....	1	30.
			Oklahoma.....	1	17.
			Pennsylvania.....	1	31.
			South Dakota.....	1	19.

*June 30-July 1.

Precipitation to equal or exceed 1.00 in 1 hour.

Iowa.....	7	14, 21, 22, 27.	New Jersey.....	5	3, 25, 30, 31.
Georgia.....	6	5, 9, 17, 19, 29.	Texas.....	5	4, 5, 6, 17.
Alabama.....	6	4, 6, 11, 19, 24, 25, 30.	North Carolina.....	4	3, 12, 17, 20.
Illinois.....	6	2, 13, 23, 29.	South Dakota.....	4	11, 17, 18.
Kentucky.....	6	3, 12, 15, 21-22, 24.	North Dakota.....	4	19, 20, 22, 29.
Louisiana.....	6	7, 8, 11, 15, 16, 26, 27.	Wisconsin.....	4	12, 15, 27.
Mississippi.....	5	5, 8, 9, 16, 28, 31.	Florida.....	3	5, 15, 17, 20, 24.
			Connecticut.....	3	25.
			Missouri.....	3	13, 28.

Precipitation to equal or exceed 1 inch in 1 hour—Continued.

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
South Carolina.....	3	1, 5, 18, 31.	Maryland.....	1	1.
Kansas.....	1	15, 16.	Massachusetts.....	1	28.
Minnesota.....	1	25, 26.	Nebraska.....	1	27.
New York.....	1	8, 22.	New Hampshire.....	1	3.
Tennessee.....	1	8, 23.	Ohio.....	1	30.
Arkansas.....	1	31.	Vermont.....	1	29.
Indiana.....	1	20.	Virginia.....	1	3, 28.
Maine.....	1	3.			

Table of excessive precipitation, July, 1892.

State and station.	Monthly rainfall to inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Alabama.						
Brewton.....	Inches.	Inches.		Inches	h. m.	
Carrollton.....	12.26	2.75	10	2.00	2 00	1
Do.....	12.40	3.20	7			
Daphne.....	12.14	2.66	24-25			
Eufaula a.....	11.09					
Florence a.....	10.24					
Florence b.....	12.26	2.98	8	1.26	0 50	
Port Deposit.....	10.61			1.36	1 10	1
Do.....						
Greensboro.....	10.37	3.50	8			
Jasper.....	10.93	2.57	8			
Livingston a.....	10.45			1.28	0 30	2
Livingston b.....	10.93			2.01	1 15	
Lynn.....	10.13					
Mobile.....	14.43	2.50	7-8	1.47	1 05	2
Do.....		3.20	24-25	1.34	1 00	2
Do.....				1.57	0 45	3
Montgomery.....		3.69	8-9	1.50	1 00	1
Newburg.....		2.70	9			
Pushmataha.....	10.46					
Sturdevant.....		3.90	9			
Talladega.....	12.41					
Tuscumbia a.....	17.95	10.00	9-10			
Tuscumbia b.....		3.00	9			
Tallassee.....	11.21	2.55	19			
Arizona.						
Payson.....		6.09?	25-26			
Arkansas.						
Harrison.....				1.10	1 00	3
Mount Nebo.....		2.77	16			
Osceola.....		3.30	3			
Connecticut.						
Canton.....				1.33	0 30	
Voluntown.....				1.00	1 00	
West Simsbury.....				1.07	0 45	2
Florida.						
Archer.....		2.59	25			
Avon Park.....				1.25	0 50	1
Do.....				2.00	1 45	2
Bristol.....		3.49	10			
Myers.....				1.05	1 00	1
Oxford.....				2.44	1 00	
Do.....				1.00	0 30	2
Pensacola.....	11.48	4.67	6-7			
Saint Andrews Bay.....	17.40	4.09	5-6			
Do.....		9.85	8-10			
Georgia.						
Dublin.....	10.52	3.41	5	3.41	2 00	
Eastman.....	11.76	2.96	5-6	1.03	1 00	1
Do.....				1.00	1 00	1
Forayth.....				1.12	0 45	
Fort Gaines.....	11.46					
Gainesville.....		2.54	9-10			
Lafayette.....	10.15			1.40	1 00	
Renaca.....				1.88	0 50	
Do.....				2.03	2 00	1
Statesboro.....	10.59	4.03	17-18	3.37	2 50	1
Toccoa.....		2.90	4-5			
Illinois.						
Aurora a.....				1.74	1 15	
Collinsville.....		3.05	13			
Golconda.....				1.16	0 40	2
Louisville.....		2.80	2-3			
Olney a.....		2.66	2-3			
Owego.....		3.04	2	2.09	1 30	
Ottawa.....		2.86	2-3			
Pana.....		2.50	2			
Riley.....				1.00	0 28	1
Rushville.....				1.53	0 45	1
Springfield.....		3.20	2-3	1.20	0 52	1
Walnut.....		2.67	2			
Indiana.						
Angola.....		3.30	2-3			
Hawpatch.....		2.78	2-3			
Huntingdon.....		3.00	3			
Logansport a.....		2.58	2-3	1.75	0 55	1
Marion.....		2.93	3			
Wabash.....		4.90	2-3			
Indian Territory.						
Eufaula.....		3.50	10			

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall in inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Iowa.						
Atlantic.....	Inches.	Inches.		Inches.	A.m.	
Bonaparte.....				1.59	0 45	14
Centerville.....	11.69	6.00	1	1.00	0 30	21
Corydon.....	12.86	6.19	1-2			
Denison.....				1.15	1 00	14
Dubuque.....		2.66	2-3			
Eagle Grove.....		3.50	1	1.10	1 00	21
Fairfield.....				1.62	0 30	21
Independence.....		3.35	1-2			
Iowa City.....		2.64	28-29			
Iowa Falls.....		3.00	2			
Keokuk.....		2.58	21-22	2.15	2 10	22
Marshall.....		2.62	1-2			
Mount Ayr.....		2.97	28			
Oskaloosa.....		2.62	28			
Seymour.....		3.81	1			
Sioux City.....				1.40	1 00	27
Tipton.....		2.70	1-2			
Do.....		2.70	28-29			
Webster.....		3.37	1-2			
Kansas.						
Gove City.....		3.00	27			
Havensville.....				2.30	0 50	15
Kiowa.....				2.20	1 00	16
Sterling.....		3.55	17			
Kentucky.						
Franklin.....				1.26	1 00	24
Harrodsburg.....				1.80	1 35	13
Lexington.....				2.35	1 50	21-22
Louisville.....				2.00	1 50	3
Paducah.....				1.05	1 00	15
Shelbyville.....		2.52	15	2.52	2 15	15
Louisiana.						
Abbeville.....	12.74					
Alexandria.....	13.04					
Baton Rouge.....				1.60	0 45	11
Cameron.....	14.80	2.96	27			
Cheneyville.....	11.53					
Emilie.....	11.43	3.20	25	3.00	3 00	26
Franklin.....	13.88	3.00	26	1.00	1 00	15
Grand Coteau.....				1.17	1 10	16
Do.....				1.08	1 00	27
Homer.....						
Houma.....	19.71	5.47	8-10			
Do.....		3.34	17-18			
Do.....		5.35	25-26			
Jeanerette.....	23.08	4.23	15			
Do.....		2.83	18			
Do.....		4.00	26			
Lafayette.....	13.12	2.87	26			
Lake Charles.....	14.20	3.40	17			
Do.....		5.40	27			
Lawrence.....	12.33					
Liberty Hill.....				2.23	0 55	8
Maurepas.....	11.68					
Monroe.....		3.38	4	1.26	1 00	7
New Orleans.....						
North Louisiana Experiment Station.....		2.62	28			
Opelousas.....	13.14	6.00	25-27			
Port Eads.....	14.00	3.80	8-9			
Rayne.....	13.53					
Roseland.....	11.29					
Schriever.....	15.37	3.10	9			
Shell Beach.....	14.14	4.05	16			
Do.....		3.00	27			
Sugar Experiment Station.....	10.02	3.17	7			
Thibodaux.....		2.83	9			
Maine.						
Portland.....				1.00	1 00	3
Maryland.						
Taneytown.....				1.20	1 00	1
Massachusetts.						
Springfield Armory.....				1.16	0 45	28
Michigan.						
Madison.....		3.25	3			
Noble.....		3.51	3			
Minnesota.						
Albert Lea.....		2.70	25	1.05	1 00	25
Duluth.....						
Farmington.....		3.95	18			
Maple Plain.....		5.11	26-27			
Minneapolis (Weather Bureau).....	11.87	7.80	26-27			
Minneapolis (V. O.).....	12.01	7.91	26-27			
Northfield.....		2.75	18			
Red Wing.....		2.70	26-27			
Saint Paul.....		4.91	26-27	1.00	0 15	26
Mississippi.						
Aberdeen.....		2.50	7-8			
Agricultural College.....	13.39	7.24	7-8			
Batesville.....				1.80	1 20	8
Do.....				1.80	1 10	16
Booneville.....	14.03	2.65	9			
Brookhaven.....	13.63	4.72	8			
Canton.....	11.53					
Cleveland.....		2.57	4			
Columbus a.....	14.49	4.46	8			
Do.....		2.72	9			
Columbus b.....	15.83	8.30	7-8			
Crystal Springs.....	12.99	4.00	7			
Edwards.....	12.11	5.00	7-8			
Hattiesburg.....				1.13	0 45	28

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall to inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Mississippi—Continued.		Inches.	Inches.	Inches.	A. m.	
Hernando				1.47	1 00	
Do.				1.19	1 00	
Louisville.	10.69	4.40	8			
Macon....	23.87	16.70	6-8	2.00	2 00	16
Meridian	11.41			1.19	0 36	31
Moss Point	17.81	4.30	9			
Do.		2.50	12			
Do.		2.75	15			
Do.		4.60	23			
Oklonsa	12.27	7.90	8-9			
Palo Alto		3.18	8			
Ship Island	11.49					
University	14.14	2.86	7-8			
Do.		3.49	13-14			
Vicksburg		3.79	17-18			
Yasoo City.		2.64	8			
Missouri.						
Chillicothe a.		3.14	29			
Darksville		2.62	2			
Dunnegan		2.50	13			
East Lynne		2.50	2			
Excelsior Springs		4.75	28			
Galt		3.10	14			
Glasgow		2.92	2			
Ironton		2.50	7-8			
Lamonte		3.17	2			
Lexington				1.70	1 00	25
Linneus		3.01	9			
Do.		2.62	28			
Mexico		2.52	20			
Mount Vernon		3.20	16			
New Palestine.		2.58	3	1.52	0 20	26
Sedalia		2.96	28			
Strother				2.00	2 00	13
Vermont.		2.63	2			
Warrenton.		2.90	13			
Nebraska.						
Culbertson a		2.88	17			
Nebraska City		2.50	20			
North Platte.		3.13	27-28	2.75	1 30	27
New Hampshire.						
Antrim				1.25	0 30	3
New Jersey.						
Beverly				1.08	0 45	25
Franklinville		4.25	31	4.25	2 40	31
Moorestown.		3.00	30	3.00	1 23	30
Oceanic				1.48	1 20	3
River Vale.				2.10	1 30	25
New York.						
Eden Center.		2.85	1-2			
Hess Road Station		2.99	2-3			
Do.		2.53	22	2.53	0 30	22
Malone		3.05	3-4	1.42	0 55	8
North Carolina.						
Fayetteville.	10.37					
Kittyhawk		2.58	19-20			
Lenoir				1.50	1 00	12
Newbern.				1.85	0 35	20
Saxon				1.86	0 45	3
Southern Pine	10.83	2.65	6			
Southport		4.05	1			
Wilmington	10.26	3.23	17	2.28	1 27	17
Do.				2.00	1 15	20
North Dakota.						
Fort Buford.		3.51	21-22			
Jamestown				1.25	1 00	18
Valley City				1.00	1 00	11
Wild Rice				1.08	1 05	18
Woodbridge.				1.41	0 45	17
Ohio.						
Celina		3.25	30			
Portsmouth a				1.62	0 15	30
Oklahoma Territory.						
Kingfisher.		2.50	17			
Pennsylvania.						
Stoyestown		3.13	31			
South Carolina.						
Charleston	10.33	3.68	5-6	1.44	1 00	5
Do.		3.06	17-18	1.78	1 00	17
Cheraw a	13.47	3.12	19-20			
Do.		2.97	31			
Cheraw b	13.67	3.95	30			
Do.		3.10	31			
Effingham		3.27	31			
Florence	10.26	3.90	30-31			
Green Pond		3.30	6			
Port Royal.				1.17	1 00	18
Saint Georges				1.25	0 30	31
Society Hill	11.28					
South Dakota.						
Aberdeen.		2.52	19	2.52	1 15	19
Cross.				2.33	1 20	20
Gary.				1.19	0 30	20
Millbank				1.05	1 00	22
Tennessee.						
Arlington	10.06	3.15	3-4			
Chattanooga				1.36	0 49	23
Covington a		3.28	7-8			
Dunlap		2.75	31			
Jackson	10.33	3.70	7-8			
Johnsonville	12.10					

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall to inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Tennessee—Continued.						
Memphis	Inches.	Inches.		Inches.	A. M.	
Savannah		3.74	7-8	1.00	1 00	8
		2.90	14	1.00	1 00	8
Texas.						
Belton				1.86	1 00	5
Elmendorf		2.60	6	2.60	2 00	5
Huntsville		2.50	6	2.50	1 30	6
Hallettsville				1.03	0 30	4
Orange		2.60	17			
Roby		3.63	31			
Tyler				1.51	0 55	17
Wichita Falls		3.00	28-29			
Vermont.						
Burlington				1.10	1 00	29
Virginia.						
Abingdon		2.90	31			
Birdsnest		3.10	19			
Danville		4.26				
Lynchburg				1.00	0 20	3
Do.				2.00	1 00	28
West Virginia.						
Ella		3.92	25			
Huntington		3.12	19			
Wisconsin.						
Chippewa Falls		3.77	27-28			
Crandon				1.35	0 30	13
Hudson		6.30	27			
La Crosse				1.78	1 05	27
Menomonie		3.30	27			
Oshkosh		3.32	27			
Pepin		2.53	25			
Richland Cent.				1.05	0 45	12
Westfield				1.25	0 30	12

* June 30 to July 1.

MAXIMUM RAINFALL IN ONE HOUR OR LESS.

The following table is a record of the heaviest rainfall during July, 1892, for periods of five and ten minutes and one hour, as reported by regular stations of the Weather Bureau furnished with self-registering gauges:

Station.	Maximum fall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
	Inch.		Inch.		Inch.	
Atlanta, Ga.	0.32	12	0.50	12	0.70	12
Bismarck, N. Dak.	0.15	11	0.30	11	0.85	11
Boston, Mass.	0.25	3	0.28	3	0.42	3
Buffalo, N. Y.	0.20	13	0.35	13	0.65	13
Cincinnati, Ohio	0.10	2	0.15	2	0.25	15
Chicago, Ill.	0.08	29	0.14	29	0.55	2
Cleveland, Ohio	0.32	24	0.49	24	0.93	24
Denver, Colo.	0.06	25	0.10	25	0.20	25
Detroit, Mich.	0.35	27	0.52	27	0.80	27
Dodge City, Kans.	0.21	16	0.26	16	0.29	16
Duluth, Minn.	0.07	3	0.10	4	0.23	25
Eastport, Me.	0.19	4	0.20	4	0.35	4
Galveston, Tex.	0.30	26	0.38	26	0.40	26
Indianapolis, Ind.	0.20	25	0.25	25	0.85	25
Jacksonville, Fla.	0.20	25	0.25	25	0.85	25
Jupiter, Fla.			0.35	2	0.95	2
Kansas City, Mo.	0.20	2	0.09	4	0.27	4
Key West, Fla.	0.07	8	0.04	27	0.31	27
Marquette, Mich.	0.02	27	0.45	11	1.00	8
Memphis, Tenn.	0.25	11	0.08	29	0.17	29
Milwaukee, Wis.	0.03	29	0.35	7	1.26	7
New Orleans, La.	0.22	7	0.41	3	0.70	3
New York, N. Y.	0.25	3	0.45	3	0.88	14
Norfolk, Va.	0.29	2	0.45	2	0.64	3
Philadelphia, Pa.	0.31	3	0.39	3	0.64	3
Philadelphia Water Works						
Pittsburg, Pa.						
Portland, Oregon	0.02	16	0.03	16	0.13	16
Saint Louis, Mo.	0.35	13	0.57	13	0.75	13
Saint Paul, Minn.	0.40	26	0.70	26	1.00	26
Salt Lake City, Utah						
San Diego, Cal.						
San Francisco, Cal.						
Savannah, Ga.	0.33	18	0.52	18	1.48	18
Tampa, Fla.	0.35	7	0.50	7	0.81	7
Washington, D. C.	0.32	14	0.53	14	0.86	19
Wilmington, N. C.	0.38	10	0.60	20	1.80	20

* Less than 0.05 in 1 hour.

† Self-register out of order.

‡ Gauge overflowed.

The following tables show the number of years for which monthly precipitation to equal or exceed 10.00 inches, daily precipitation to equal or exceed 2.50 inches, and hourly precipitation to equal or exceed 1.00 inch has been reported in the several states and territories for July during the last 23 years:

Excessive monthly precipitation.

State.	No. years noted.	State.	No. years noted.
Florida.....	17	Maryland.....	3
North Carolina.....	13	Minnesota.....	3
Georgia.....	12	The Dakotas.....	2
New Hampshire.....	11	Virginia.....	2
Alabama.....	10	West Virginia.....	2
South Carolina.....	10	Colorado.....	2
Iowa.....	9	Connecticut.....	1
Louisiana.....	9	Delaware.....	1
Kansas.....	8	District of Columbia.....	1
Missouri.....	7	Indian Territory.....	1
Ohio.....	7	Kentucky.....	1
Indiana.....	6	Arizona.....	0
Nebraska.....	6	Idaho.....	0
Pennsylvania.....	6	California.....	0
New York.....	5	Maine.....	0
Tennessee.....	5	Montana.....	0
Mississippi.....	5	Nevada.....	0
Massachusetts.....	4	New Mexico.....	0
Michigan.....	4	Oregon.....	0
Texas.....	4	Rhode Island.....	0
Illinois.....	3	Utah.....	0
New Jersey.....	3	Vermont.....	0
Arkansas.....	3	Washington.....	0
Wisconsin.....	3	Wyoming.....	0

Excessive daily precipitation (24 hours).

State.	No. years noted.	State.	No. years noted.
Kansas.....	10	Kentucky.....	3
Iowa.....	10	New Jersey.....	2
Indiana.....	10	Virginia.....	2
North Carolina.....	10	Connecticut.....	6
Georgia.....	15	New Hampshire.....	6
Nebraska.....	15	West Virginia.....	5
Pennsylvania.....	15	District of Columbia.....	4
South Carolina.....	15	Indian Territory.....	4
Florida.....	14	Arkansas.....	4
Texas.....	14	Montana.....	3
The Dakotas.....	13	Rhode Island.....	3
Illinois.....	12	Arizona.....	3
Louisiana.....	12	Delaware.....	3
Ohio.....	12	Maine.....	2
Alabama.....	11	Colorado.....	2
Wisconsin.....	10	New Mexico.....	2
Mississippi.....	10	Oregon.....	2
Missouri.....	10	Vermont.....	1
New York.....	10	California.....	1
Tennessee.....	9	Idaho.....	0
Massachusetts.....	9	Nevada.....	0
Maryland.....	9	Utah.....	0
Minnesota.....	9	Washington.....	0
Michigan.....	8	Wyoming.....	0

Excessive hourly precipitation.

Iowa.....	17	Maryland.....	5
Pennsylvania.....	15	Kentucky.....	5
Kansas.....	15	Wisconsin.....	5
North Carolina.....	15	Wyoming.....	4
Illinois.....	14	Colorado.....	4
Alabama.....	13	New Mexico.....	4
Florida.....	13	West Virginia.....	4
Indiana.....	13	Maine.....	3
Nebraska.....	13	New Jersey.....	3
Michigan.....	12	Missouri.....	3
The Dakotas.....	11	District of Columbia.....	2
Georgia.....	11	Indian Territory.....	2
New York.....	11	Connecticut.....	2
Texas.....	11	New Hampshire.....	2
Virginia.....	10	California.....	1
Ohio.....	9	Montana.....	1
Louisiana.....	9	Utah.....	1
South Carolina.....	9	Nevada.....	1
Tennessee.....	9	Vermont.....	1
Arkansas.....	8	Delaware.....	0
Minnesota.....	8	Idaho.....	0
Arizona.....	7	Oregon.....	0
Massachusetts.....	6	Rhode Island.....	0
Mississippi.....	6	Washington.....	0

The following tables give exceptionally heavy monthly, daily, and hourly precipitation reported for July during the last 23 years:

Monthly.

Station and state.	Am't.	Year.	Station and state.	Am't.	Year.
White, Tenn.....	Inches.		Wilmington, N. C.....	Inches.	
Mount Washington, N. H.....	28.11	1883	Auburn, Ala.....	21.12	1886
Macon, Miss.....	23.90	1884		21.09	1887
	23.87	1892			

Daily (24 hours).

Station and state.	Amount.	Date.	Station and state.	Amount.	Date.
Edwards, Miss.....	Inches.		Greenville, Miss.....	Inches.	
Tusculum, Ala.....	16.70	6-8, 1892	Corydon, Iowa.....	6.21	27-28, 1891
Union Point, Ga.....	10.00	9-10, 1892	Grand Junction, Tenn.....	6.19	1-2, 1892
Saint Andrews Bay, Fla.....	10.00	29, 1887	Payson, Ariz.....	6.10	13-14, 1890
South Orange, N. J.....	9.85	8-10, 1892	Charleston, S. C.....	6.09	25-26, 1892
Columbus, Miss.....	8.57	30-31, 1889	De Land, Fla.....	6.07	27-28, 1890
Fort Barrancas, Fla.....	8.30	7-8, 1892	Centerville, Iowa.....	6.05	12-13, 1891
Logan, Iowa.....	8.28	23-23, 1890	Opelousas, La.....	6.00	1, 1892
Okolona, Miss.....	8.00	10, 1878	Russellville, Ark.....	6.00	25-27, 1892
Minneapolis, Minn.....	7.90	8-9, 1892	Houma, La.....	5.47	8-10, 1892
Plaquemine, La.....	7.75	5, 1891	Lake Charles, La.....	5.40	27, 1892
Independence, Mo.....	7.61	14, 1885	Manhattan, Kans.....	5.38	23, 1892
Wilmington, N. C.....	7.33	15, 1885	Houma, La.....	5.35	25-26, 1892
Agricultural Col., Miss.....	7.24	7-8, 1892	Manchester, N. H.....	5.17	23-24, 1887
Hulmeville, Pa.....	7.00	26, 1879	Rock Island Arsenal, Ill.....	5.16	13, 1889
Marengo, Ind.....	7.00	23, 1890	Maple Plain, Minn.....	5.11	26-27, 1892
Cheboygan, Mich.....	6.34	7-8, 1890	Edwards, Miss.....	5.00	7-8, 1892
Hudson, Wis.....	6.30	27, 1892	Fort Clark, Tex.....	5.00	10, 1889

One hour and less.

Station and state.	Amount.	Time.	Date.
Savannah, Ga.....	Inches.		
Jupiter, Fla.....	0.47	0 05	18, 1891
Do.....	0.45	0 05	21, 1891
Boston, Mass.....	0.43	0 05	21, 1890
Chicago, Ill.....	0.40	0 05	4, 1891
Dodge City, Kans.....	0.40	0 05	14, 1890
Savannah, Ga.....	0.40	0 05	6, 1891
Washington, D. C.....	0.40	0 05	8, 1890
Saint Paul, Minn.....	0.40	0 05	15, 1891
Wilmington, N. C.....	0.40	0 05	26, 1892
Detroit, Mich.....	0.38	0 05	10, 1892
Saint Louis, Mo.....	0.35	0 05	27, 1892
Tampa, Fla.....	0.35	0 05	13, 1892
Savannah, Ga.....	0.35	0 05	7, 1892
Atlanta, Ga.....	0.33	0 05	18, 1892
Cleveland, Ohio.....	0.32	0 05	12, 1893
Washington, D. C.....	0.32	0 05	24, 1893
Philadelphia, Pa.....	0.31	0 05	14, 1892
Indianapolis, Ind.....	0.30	0 05	3, 1892
Washington, D. C.....	0.30	0 05	26, 1892
Norfolk, Va.....	0.30	0 05	3, 1890
Roston, Mass.....	0.29	0 05	3, 1892
Memphis, Tenn.....	0.25	0 05	3, 1892
New York, N. Y.....	0.25	0 05	11, 1892
Huron, S. Dak.....	0.25	0 05	3, 1892
Albany, N. Y.....	1.30	0 10	30, 1885
Savannah, Ga.....	1.22	0 10	10, 1876
Saint Paul, Minn.....	0.92	0 10	18, 1891
Dubuque, Iowa.....	0.70	0 10	26, 1891
Wilmington, N. C.....	0.67	0 10	8, 1889
Washington, D. C.....	0.60	0 10	20, 1892
Detroit, Mich.....	0.53	0 10	14, 1892
Savannah, Ga.....	0.52	0 10	27, 1892
Atlanta, Ga.....	0.52	0 10	18, 1892
Norfolk, Va.....	0.50	0 10	12, 1892
New York, N. Y.....	0.50	0 10	18, 1890
Tampa, Fla.....	0.50	0 10	27, 1880
Sandusky, Ohio.....	0.50	0 10	27, 1892
Portsmouth, Ohio.....	2.25	0 15	11, 1879
Amama, Iowa.....	1.62	0 15	30, 1892
New Orleans, La.....	1.56	0 15	31, 1878
Philo, Ill.....	1.40	0 15	5, 1889
New York, N. Y.....	1.20	0 15	8, 1888
New Market, Ala.....	1.00	0 15	13, 1880
Rancho, N. J.....	1.00	0 15	12, 1889
Saint Paul, Minn.....	1.00	0 15	17, 1890
Amherst, Mass.....	1.00	0 15	26, 1892
West Leavenworth, Kans.....	2.00	0 20	16, 1879
New Palestine, Mo.....	1.90	0 20	21, 1887
Lynchburg, Va.....	1.52	0 20	28, 1892
Logansport, Ind.....	1.00	0 20	3, 1892
Hess Road Station, N. Y.....	3.50	0 30	7, 1879
Wilkesbarre, Pa.....	2.50	0 30	23, 1892
Benton Harbor, Mich.....	2.50	0 30	15, 1890
Fairfield, Iowa.....	2.01	0 30	14, 1890
Newbern, N. C.....	1.62	0 30	21, 1892
Jacksonville, Fla.....	1.35	0 35	20, 1892
Springer, N. Mex.....	3.49	0 40	6, 1886
Lansing, Mich.....	3.40	0 50	13, 1891
Rock Island Arsenal, Ill.....	3.40	1 00	21, 1883
Tucson, Ariz.....	5.16	1 15	13, 1889
	5.10	1 45	11, 1878

HAIL.

Description of the more severe hailstorms of the month is given under "Local storms." Hail was reported as follows: 1st, Arizona, Colorado, Maryland, Nebraska, Pennsylvania, South Carolina, and West Virginia. 2d, Illinois and Kansas. 3d, Maryland, New Hampshire, and New Jersey. 4th, New Mexico. 5th, Georgia, New Mexico, New York, and

Pennsylvania. 6th, Arizona. 7th, Illinois, Kentucky, Wisconsin, and Wyoming. 8th, Connecticut, Missouri, Nevada, and New York. 9th, Montana. 10th, California. 11th, North Dakota and Oregon. 12th, Iowa, Nebraska, and New Mexico. 13th, Colorado, Illinois, Nebraska, New York, North Dakota, and Pennsylvania.

14th, Colorado, Iowa, Nebraska, North Dakota, and South Dakota. 15th, Colorado, Michigan, New York, Ohio, and Pennsylvania. 16th, Colorado, Illinois, New Hampshire, and New Mexico. 17th, Colorado and North Dakota. 18th, Colorado, Kansas, North Dakota, and Ohio. 19th, Arkansas, North Dakota, and South Dakota. 20th, Illinois, Indiana, Iowa, Missouri, and New York. 21st, Arizona, Nebraska, and South Dakota. 22d, Arizona, Colorado, Maryland,

Michigan, and South Dakota. 22d, Arizona, Colorado, Maryland, Michigan, Minnesota, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Pennsylvania, and South Dakota.

23d, Colorado, Michigan, New Jersey, and New Mexico. 24th, Iowa, Michigan, and Ohio. 25th, Colorado, Florida, Iowa, Pennsylvania, and South Dakota. 26th, New Jersey, New York, Pennsylvania, and South Dakota. 27th, Colorado, Pennsylvania, South Dakota, Virginia, West Virginia, and Wisconsin. 28th, California, Colorado, Missouri, and Virginia. 29th, New York and South Dakota. 30th, Kansas, Nebraska, North Dakota, and Wisconsin. 31st, Arkansas, Colorado, Georgia, Iowa, Kansas, Nebraska, New Mexico, Oklahoma, Texas, Virginia, and Wisconsin.

WINDS.

The prevailing winds for July, 1892, are shown on Chart II by arrows flying with the wind. In the New England, middle and south Atlantic, and east Gulf states, and the northern plateau regions the winds were generally from south to southwest; over the Florida Peninsula, from east to southeast; in the west Gulf states, the Ohio Valley and Tennessee, the upper lake region, the upper Mississippi valley, and over the southern and middle plateau regions, from southeast to southwest; in the lower lake region, on the northeast slope of the Rocky Mountains, and on the north and middle Pacific coasts, from southwest to northwest; in the Missouri Valley, from east to south; on the middle-eastern and southeastern slopes of the Rocky Mountains, from southeast to south; on the south Pacific coast, from west to northwest; and in the extreme northwest, variable.

HIGH WINDS.

[In miles per hour.]

Wind velocities of 50 miles, or more, per hour were reported at regular stations of the Weather Bureau as follows: 1st, 54, se., at Kearney, Nebr.; 50, se., at Dodge City, Kans.; 50, s., at Amarillo, Tex. 3d, 90, w., at Mount Washington, N. H. 4th, 90, nw., at Mount Washington, N. H.; 54, sw., at Helena, Mont. 11th, 50, s., at Fort Canby, Wash. 13th, 56, nw., at Lexington, Ky. 20th, 60, w., at Huron, S. Dak. 22d, 50, se., at Tucson, Ariz. 24th, 64, nw., at Cleveland, Ohio; 57, nw., at Sandusky, Ohio. 25th, 56, w., at Huron, S. Dak. 27th, 60, ne., at Winnemucca, Nev.

LOCAL STORMS.

1st.—A hailstorm passed over the north part of Berkeley county, W. Va., in the afternoon, leveling wheat in a path about one mile in width. Corn about Taneytown, Md., was reported damaged by hail. Several buildings were struck by lightning and burned near Paw Paw, Mich. A thunderstorm, with high wind, destroyed barns about Allison, Kans. A violent thunderstorm in the evening damaged property to the estimated value of \$50,000 about Mason, Nebr. A thunderstorm, with heavy rain, began at Kearney, Nebr., in the evening; the wind reached a velocity of 54 miles per hour from the southeast, and a barn was struck by lightning and burned. A severe storm occurred at David City, Nebr., in the evening, destroying trees and buildings at the Fair ground; one building was apparently crushed in from the northwest. A destructive hailstorm was reported in Gage county, Nebr.

2d.—A heavy thunder, wind, and rain storm visited Putnam, Hancock, Wood, Wyandot, and Huron counties, Ohio, in the evening. The general course of the storm was east; it developed greatest force at Carey and Bluffton, Ohio, and was last noted over Medina county. A heavy storm of wind and rain swept over Hamilton county, Ohio, between 5 and 6 p. m., causing considerable damage of a minor character. At Bluffton, Ohio, a thunder, wind, and rain storm moved east in a path about 200 feet in width at midnight, damaging buildings

to the extent of about \$5,000. Near Van Wert, Ohio, one person was killed, a number were injured, and property was destroyed by lightning. At Hassan, Ohio, a storm began 11.45 p. m., 2d, and ended 12.30 a. m., 3d; buildings were unroofed and moved from their foundations, and orchards and crops were destroyed. At Foraker, Ohio, a thunder and rain storm moved southeast in a path about 20 rods in width at night, wrecking several buildings.

A storm, with funnel-shaped cloud, was reported at Tocsin, Ind. The cloud had a whirling motion, and timber, etc., were carried up in the funnel; damage placed at \$5,000. A heavy rainstorm, with some thunder and lightning, occurred at Huntington, Ind. A severe storm, with heavy rain, moved southeast at Winchester, Ill., at 5.56 p. m. At 5.30 p. m. a severe storm moved eastward in a zigzag path 600 to 800 feet in width at Chapin, Ill., the south edge of the path touching that place. Some rain fell before, and heavy rain occurred after the passage of the storm, and hail, thunder, and lightning were reported; several persons were injured; \$2,000 damage was caused to buildings; and crops were destroyed to the estimated value of \$15,000. During a moderate thunderstorm at Springfield, Ill., the wind reached a velocity of 34 miles per hour from the south, damaging trees. An exceptionally heavy rainstorm occurred about Ottawa, Ill., in the evening. Great damage by storm was reported in Henry county, Ill.; one person was killed, four were injured, and much property was destroyed at Geneseo, Ill.

A heavy windstorm damaged timber about Austin, Tenn. At Hannibal, Mo., a thunderstorm began at 5.05 p. m. and continued during the night, damaging trees, etc. Mexico, Mo., and vicinity, was visited by a destructive storm at night; damage estimated at \$6,000. The storm was also severe at Platte River and Withers Mills, Mo. A tornado, with black funnel-shaped cloud, passed about 6 miles north of Davenport, Iowa, between 5.30 and 6 p. m. The storm moved almost due east, the course changing to southeast at times; the length of the path was about 15 miles, and its width averaged about 40 rods. It was attended by heavy rain, sharp thunder, and vivid lightning, and destroyed property to the estimated value of \$8,000 to \$10,000. Débris in the track was generally thrown eastward. In places trees on the north side of the track were thrown north, and on the south side of the track they were thrown south. The duration of the storm at any one point did not exceed 2 to 3 minutes.

3d.—A heavy rainstorm moved northeast over Hartford, Me. At North Buckfield, Me., a thunderstorm moved east in a path 10 to 20 rods in width at 3 p. m., causing damage to the extent of \$3,000. A thunderstorm at 2.30 p. m., damaged property to the value of \$5,000 at Paris, Me. During a heavy rain and thunder storm at Manchester, N. H., from 4 to 6.30 p. m., a house was struck by lightning. A thunder, rain, and hail storm moved northeast over Church Hill, Md., at 6.30 p. m., wrecking several buildings. Damage was caused by high

wind at Barren Creek Springs, Md. A thunderstorm, with heavy rain and high wind, prevailed at Lynchburg, Va., from 2.25 to 4.25 p. m., causing damage of a minor character. Timber was destroyed by high wind during a thunderstorm at Wickliffe, Ky. High wind damaged early corn at Austin, Tenn.

4th.—A thunderstorm, with southwest wind reaching 54 miles per hour, occurred at Helena, Mont., in the evening; damage was caused to buildings by heavy rain. At Fort Stanton, N. Mex., a thunderstorm, with heavy rain and some hail, began 6.18 p. m.; mountain streams were flooded, and lightning struck near the station. Stock was killed and trees were struck by lightning at Show Low, Ariz.

5th.—At Charleston, S. C., a severe thunder and rain storm began 8.45 p. m.; the rain was very heavy from 9.57 to 10.25 p. m., and the storm continued during the night; lightning struck in several places, and cellars were flooded. A cloudburst, with high wind, was reported north of Dudleyville, Ariz., in the afternoon.

6th.—A house was struck by lightning at Pensacola, Fla. During a heavy thunder and rain storm at Wetzell, Ohio, one person was killed, and property was damaged to the value of \$5,000. Some damage was caused at Salt Lake City, Utah, by a wind squall from the south of a few minutes' duration. At Tucson, Ariz., a heavy thunderstorm, with hail, began 5.45 p. m. The wind increased to an extreme velocity of 65 miles per hour, causing considerable damage to roofs, etc.

7th.—A house and a tree were struck and a number of persons were shocked by lightning at Pensacola, Fla. A destructive cloudburst was reported at Manitou, Colo.

8th.—A thunder and rain storm damaged crops and light structures at Glencoe, Minn. A hailstorm occurred at Eureka, Nev.

9th.—Heavy rain damaged crops about Montgomery, Ala.

10th.—Lightning struck in several places in northwest Lower Michigan and eastern Wisconsin; at Green Bay, Wis., a child was killed by lightning.

11th.—A house was struck by lightning at Crystal Springs, Miss. At Moorhead, Minn., a thunderstorm began 9.35 p. m., with light rain. In a few minutes a second black cloud advanced rapidly from the west; when the cloud was directly overhead rain fell in torrents, and the wind changed from southeast to northwest, increased to 43 miles per hour, and continued high until midnight; one building was struck by lightning. A heavy thunder and hail storm began at Bismarck, N. Dak., at 7 p. m., and lasted 40 minutes; .72 inch of rain fell in 27 minutes, and hail fell 12 minutes; the wind reached a velocity of 46 miles per hour. Buildings were blown down during a thunderstorm in Traill county, N. Dak. High wind destroyed several buildings in Steele county, N. Dak. Lightning struck several buildings and hail damaged crops about Grand Forks, N. Dak.

12th.—A thunderstorm between 3 and 4 p. m. caused minor damage at Jacksonville, Ill. A thunderstorm occurred at Grand Haven, Mich., in the evening. Trees and outbuildings were blown down during a thunderstorm at Harvey, Wis. Cattle were killed by lightning at Plover, Wis. A severe thunderstorm visited Whitewater, Wis., in the evening. The storm was severe about Janesville, Wis. A thunder, rain, and hail storm caused damage south of Dubuque, Iowa, in the evening. During a thunderstorm at Davenport, Iowa, in the evening, the wind reached an extreme velocity of 60 miles per hour, and the temperature fell 20° in 18 minutes.

13th.—A thunderstorm, with heavy rain and small hail, occurred at Corning, N. Y. A man was struck by lightning at Rochester, N. Y. During a thunderstorm at State College, Pa., about noon, a barn was struck by lightning. At Springfield, Ohio, a thunderstorm appeared in the west about 11 a. m. Two clouds, one from the northwest and one from the southwest, rushed together, and a dark, funnel-shaped cloud descended to the ground. The tornado moved eastward in a path about 200 feet in width. The course changed to south

60° east, and at that point a substantial brick building appeared to burst, the walls falling outward down to the first floor, and many buildings were prostrated or badly damaged. After changing its course the path of the storm widened to about 400 feet, and there was evidence of violent upward and whirling motions. After moving southeastward several blocks the storm again assumed an easterly course. During the passage of the tornado many strong buildings were demolished, trees and timbers were thrown in all directions, but mostly southward, and upward of 2,000 shade trees were destroyed; damage to property estimated at \$20,000.

At Springfield, Ill., a thunderstorm, with heavy showers of rain, prevailed from 7.52 to 9.46 a. m.; in the neighboring country damage was caused by heavy rain, and cattle were killed by lightning. A violent rain and thunder storm occurred at Fairport, Mich. An exceptionally severe thunderstorm prevailed at Bismarck, N. Dak., from 8.30 p. m. until midnight; hail fell for 5 minutes, commencing at 10.20 p. m., and several houses were struck by lightning. During a thunderstorm at Grafton, N. Dak., considerable damage of a minor character was caused by high wind. A heavy thunderstorm occurred at Warrensburg, Mo. A house was struck by lightning at Saint Louis, Mo., in the early morning. During a thunderstorm at Kansas City, Mo., in the afternoon, 2 persons and 2 houses were struck by lightning. A thunderstorm, with high wind, caused some damage at Sedalia, Mo. A barn was struck by lightning and burned at East Lynne, Mo. Heavy rain flooded streams about Lead Hill, Ark.

14th.—A severe thunderstorm was reported at Paterson and New Brunswick, N. J., in the evening. At Knoxville, Tenn., a heavy thunder and rain storm from the west prevailed from 1.40 to 2.30 p. m.; one house was struck and one person was stunned by lightning. Severe thunder and rain storms occurred about Chattanooga, Tenn.; at Highland Park 2 men were struck and 3 men were shocked by lightning. During a thunderstorm in the early morning at Kansas City, Mo., a church was struck by lightning. Damage was caused by high wind about Marshall, Iowa. A heavy thunder and rain storm occurred at Boone, Iowa. A thunderstorm, with high wind, caused damage about Des Moines, Iowa. A wind and hail storm damaged crops south and southwest of Alta, Iowa. Damage was caused by hail in south-central Nebraska. At Haigler, Nebr., 2 houses were struck by lightning. During a thunderstorm in the early morning at Rapid City, S. Dak., a house was struck by lightning.

15th.—A church was struck by lightning at Burlington, Vt. A thunderstorm, with high wind, moved east over Bridgeport, N. Y.; one person was killed. Damage was caused by high wind during a thunderstorm at Fulton, N. Y. During a thunderstorm at Rochester, N. Y., in the evening, 2 houses and 4 street cars were struck by lightning, electric wires were damaged and trees blown down. A severe thunderstorm, with hail and high wind, occurred at Buffalo, N. Y., in the evening. A thunderstorm caused some damage about Mount Morris, N. Y. At Erie, Pa., a building was struck by lightning and another was blown down. A thunderstorm occurred at Pittsburg, Pa., in the evening. A thunder and hail storm was noted at Grampian Hills, Pa. At Washington, D. C., a man was killed by lightning. A house was struck by lightning at Pensacola, Fla. A heavy rain, wind, and thunder storm in the afternoon caused damage at Cincinnati, Ohio. A thunderstorm, with high wind, occurred at Jeffersonville, Ind. Crops, orchards, etc., about Covington, Tenn., were damaged by high wind.

Damage to the extent of about \$10,000 was caused by a thunderstorm at Louisville, Ky., in the afternoon. The storm continued from 4.50 to 5.30 p. m.; the wind reached a velocity of 44 miles per hour from the west; and the temperature fell 25°. Some destruction was caused about Harrodsburg and Lagrange, Ky., by a thunderstorm. Damage was caused by heavy rain about Shelbyville, Ky. High northwest winds prevailed at Sault Ste. Marie, Mich. The gale was also severe

over northern Lake Michigan and northern Lake Huron. At Alpena, Mich., a violent thunderstorm from the west began 11.45 a. m. and ended 1 p. m. A destructive rain, hail, and wind storm occurred north of Alpena about noon. Damage was caused by high wind about Platte River, Mo. At Concordia, Kans., a heavy thunderstorm, with high wind, moved from the northwest at 7.30 a. m. A violent thunder and rain storm from the northeast occurred at Conway, Ark.

16th.—At Kiowa, Kans., a thunderstorm began 6 p. m. and ended 7 p. m.; 2.20 inches of rain fell; damage was caused by wind; and a house was struck by lightning. A thunderstorm, with high wind, occurred at Pueblo, Colo., in the evening; the temperature fell 25°; and damage was caused to trees, etc.

17th.—One person was reported killed by lightning in Warren county, N. J. A building was struck, and stock was killed by lightning near Ocala, Fla. A heavy thunder and rain storm moved east over Vicksburg, Miss., in the afternoon. A man and a horse were killed by lightning at Oberlin, Kans.

18th.—A destructive thunder, rain, and wind storm occurred at Chattanooga, Tenn., in the afternoon. A thunderstorm, with exceptionally heavy rain, damaged crops about Red Wing, Minn. An unusually severe thunder and rain storm occurred at Moorhead, Minn., in the early morning; 2 horses were killed by lightning. During a thunder and hail storm in the afternoon at Ashland, Kans., buildings were damaged to the extent of about \$3,000.

19th.—An exceptionally heavy rainstorm visited Richmond, Va., at night. During a thunder and rain storm at Chattanooga, Tenn., in the evening, a house was struck and 2 persons were stunned by lightning. In the afternoon a barn was struck by lightning and burned at Mottville, Mich. A thunderstorm in the morning caused some damage about Red Wing, Minn. Severe thunderstorms, with high wind and heavy rain, occurred in South Dakota at night, causing considerable damage to buildings, stock, and crops. At Gettysburg, S. Dak., a funnel-shaped cloud was reported; heavy rain and hail fell; 2 persons were killed; and the estimated damage to property was \$25,000. At Courtland, S. Dak., the storm was violent, with heavy rain and large hail.

At Pierre, S. Dak., the wind reached a velocity of 42 miles per hour from the north, prostrating the telegraph line between Pierre and Huron. Stock was killed by lightning and buildings were blown down at De Smet, S. Dak. Buildings were blown down at Aberdeen, S. Dak., and 2.52 inches of rain were recorded from 11.30 p. m., 19th, to 1.15 a. m., 20th. The damage at Wolsey, S. Dak., was placed at \$2,000. At Clark, S. Dak., trees were blown down and light buildings overturned. The damage to property at Watertown, S. Dak., was placed at \$5,000. At Huron, S. Dak., a thunderstorm began at 12.45 a. m., 20th, and continued 2 hours; the wind reached an estimated velocity of 75 miles per hour in a straight blow from the west, and considerable damage was caused to buildings, etc. At Ellendale, N. Dak., one person was reported killed by lightning.

20th.—A heavy thunderstorm occurred in the morning at Kittyhawk, N. C., and a whirlwind and waterspout were reported at Killdevil Hills Life Saving Station, where a house was moved from its foundations, and a trough 3 to 4 feet in depth and width was cut in the sand. A severe thunderstorm from the northwest, with heavy rain, occurred at Wilmington, N. C., in the afternoon. Destructive thunderstorms occurred in Illinois. At Olney, Ill., trees, etc., were blown down. Damage was caused by wind at Effingham and Walker, Ill. At Monticello, Ill., several houses were struck by lightning, 2 persons were injured, and bridges were carried away as the result of heavy rain. At Springfield, Ill., a thunderstorm began 2.25 p. m. and ended 4.11 p. m., with rain at intervals; the temperature fell 19° in 20 minutes; the wind reached a velocity of 32 miles per hour from the northwest; buildings and crops were damaged; and stock was killed by lightning.

At Saint Louis, Mo., a northwest gale began 2.48 p. m., with wind 48 miles per hour for 10 minutes; the temperature fell from 93° at 2 p. m. to 71° at 3.15 p. m., a fall of 15° being noted in the first five minutes of that period; no serious damage reported. A house was unroofed at Washington, Iowa. During a thunderstorm, with high wind, at Keokuk, Iowa, the temperature fell 22° in 10 minutes. In the early morning a house was struck by lightning at Des Moines, Iowa. At Omaha, Nebr., a thunderstorm was observed approaching from the southwest at 12.10 a. m. At 12.50 a. m. the wind changed suddenly from southwest, velocity 10 miles per hour, to west, velocity 60 miles per hour, causing considerable damage to buildings, etc.

21st.—A windstorm destroyed frail buildings at Hiteman, Iowa. At Murray, Iowa, a severe thunderstorm, with high wind, occurred at night; 2 barns were struck and stock was killed by lightning. Lightning struck several buildings at Mason City, Iowa. A heavy thunderstorm began about 6 p. m. at Omaha, Nebr.; high wind damaged unfinished buildings; rain fell in torrents; some hail was noted; and the temperature fell from 98° at 6 p. m. to 68° at 7 p. m. At Beemer, Nebr., a barn was struck by lightning and burned.

22d.—A thunderstorm, with high wind, occurred at Oswego, N. Y., in the afternoon; the Telephone Exchange office was set on fire. A thunder and hail storm damaged property about Bradford, Pa., to the estimated value of \$25,000. Some damage was caused by lightning at State College, Pa. At Moorhead, Minn., a thunder and hail storm prevailed from 1.20 to 2.30 p. m.; the wind reached a velocity of 36 miles per hour, causing some damage to roofs and chimneys, and damage by hail was reported east of Moorhead. An exceptionally severe thunderstorm, with some hail, occurred at Fort Buford, N. Dak., in the early morning; garden vegetables were destroyed, a ferry boat was sunk, railroad tracks were washed out, and lightning destroyed the anemometer wire at the Weather Bureau office. Shade trees were blown down during a thunderstorm at Fargo, N. Dak.

23d.—A destructive windstorm occurred west of Adairsville, Ga. During a thunderstorm at Riley, Ill., 1.00 inch of rain fell in 28 minutes, and some damage was reported by lightning north of that place. A house was struck by lightning at Larrabee, Iowa.

24th.—A thunderstorm prevailed at Rochester, N. Y., from 8.30 to 10.50 p. m. A building was struck by lightning at Carthage, N. Y. At Parkersburg, W. Va., a thunderstorm, with high wind and heavy rain, began 11.15 p. m., 24th, and ended 12.20 a. m., 25th; a house was struck by lightning and great damage was caused by wind and rain along the railroads. In the evening a house was struck by lightning at Montgomery, Ala. At Toledo, Ohio, a thunderstorm, with high wind and heavy rain, prevailed from 5.30 to 6.55 p. m.; the temperature fell 25° in 20 minutes; the wind attained a velocity of 49 miles per hour from the northwest, with an extreme velocity of 60 miles per hour; some damage was caused by wind and lightning. At Sandusky, Ohio, the wind reached a velocity of 60 miles per hour from the northwest at 7 p. m.; many large trees were blown down; a man was killed by lightning, and a boy was killed by a falling limb of a tree.

At Cleveland, Ohio, a blinding flash of lightning, a terrific report of thunder, and a downpour of rain occurred at 6.37 p. m., followed at 6.40 p. m. by large quantities of hail. The hail continued 20 minutes, and the thunderstorm until 7.05 p. m., when it suddenly ended, to begin again, with heavy rain at 7.30 p. m.; .32 inch of rain fell in 5 minutes during the second storm; great damage was caused by hail and heavy rain. Considerable damage was caused by high wind, heavy rain, and hail throughout northern Ohio.

In the afternoon lightning struck in several places about Nashville, Tenn. Trees and crops were prostrated about Nunnely, Tenn., during a thunderstorm. Damage was caused by lightning at Sturgis, Mich. During a thunderstorm, with hail, at Jonesville, Mich., lightning struck in several places, and

trees were blown down. A barn was struck by lightning at Harvey, Wis. One person was killed by lightning at Parkston, S. Dak. Buildings were damaged during a severe thunderstorm at Clermont, Iowa.

25th.—A barn was struck by lightning near Quaker Street, N. Y. A heavy thunderstorm, with hail, occurred at Port Richmond, Pa. A thunderstorm caused some damage about Philadelphia, Pa. A thunderstorm, with high wind and heavy rain, occurred at Beverly, N. J. Heavy rain, attending a thunderstorm in the evening, caused great damage about Ella, W. Va. Lightning and high wind in the afternoon damaged property at Parkersburg, W. Va.; a large barn was struck by lightning and burned; loss about \$6,000. A heavy thunder and rain storm occurred at Livingston, Ala., from 7.30 to 8 p. m.; 1.28 inch of rain fell; a house was struck, and a number of persons were shocked by lightning. At Greenville, Miss., a church was struck by lightning. Some stock was killed and a man was stunned by lightning at Covington, Tenn. A child was killed by lightning at Paducah, Ky. A barn was struck by lightning at Alpena, Mich. A house was struck by lightning at Plover, Wis. Grain was destroyed by hail about Algona, Iowa.

26th.—In the early morning 3 barns at Berlin and one barn at Williams, Vt., were struck by lightning and burned. A thunderstorm, with violent gusts of wind, occurred at Ithaca, N. Y., in the early morning; a hotel was struck by lightning. A thunderstorm, with heavy hail, caused damage to the extent of about \$10,000 about Pine Grove, Pa. One person was killed by lightning at Philipsburg, Pa. A horse was killed by lightning at Stanardsville, Va. The roof of the Weather Bureau office building at Tampa, Fla., was struck by lightning in the evening. Lightning struck in several places about Thornville, Mich.; one barn was struck by lightning and burned. A severe thunderstorm prevailed at night at Barron, Wis.; a man was killed by lightning near Barron and a house was struck by lightning at Dallas, Wis. Heavy rain at Minneapolis, Minn., flooded sewers and interrupted street traffic. In Saint Paul, Minn., the damage from heavy rain was estimated at \$250,000. The railroad depot at Eggleston, Minn., was struck by lightning and burned. A heavy wind and rain storm passed over Flandreau, S. Dak.; 1.00 inch of rain fell in 25 minutes, and crops were damaged. A house was struck by lightning at Amarillo, Tex.

27th.—A thunderstorm from the west visited Hess Road Station, N. Y., at 3.45 p. m.; 5 houses were struck by lightning; buildings were injured, and a large number of trees were destroyed by high wind; 2.10 inches of rain fell, and crops in a path about 1 mile in width were flattened. A violent storm struck York, Pa., at 1.22 p. m. and ended 1.50 p. m.; one person was killed by lightning, and considerable damage was caused by high wind. During a thunderstorm at Lebanon, Pa., a mill was wrecked by wind. High wind caused damage at East Earl, Pa. Damage to the extent of \$3,000 to \$4,000 was caused by a thunderstorm at Terre Hill, Pa. Damage of a minor character was reported at Columbus, N. J. A thunderstorm, with light hail, occurred at Stony Man, Va. At Luray, Va., one person was killed by lightning during a thunder and hail storm. Two persons were killed, and 3 barns were struck by lightning at Culpeper, Va.

Damage was caused at Milton, W. Va., by a thunderstorm. During a thunderstorm in the afternoon at Parkersburg, W. Va., a number of persons were shocked, and 40 telephone wires were burned out by lightning. At Toledo, Ohio, a

thunderstorm from the west began 1 p. m. and ended 2.30 p. m.; the temperature fell from 91° to 68°; and a house was struck by lightning. Buildings were damaged during a thunderstorm at Massillon, Ohio. Three houses were struck by lightning at Portsmouth, Ohio. Buildings were unroofed at Wooster, Ohio. Lightning struck in three places at Wauseon, Ohio. Severe storms occurred in Lower Michigan in the early afternoon. At Detroit, Mich., lightning struck in two places, and the temperature fell from 91° to 68° in about 5 minutes. A house was struck by lightning at Windsor, Ont. At Alpena, Mich., a thunderstorm occurred in the early morning, and a second thunderstorm prevailed from 8.10 to 10.50 a. m.; a large number of telephone wires were burned out. A man and a horse were killed by lightning at Green Bay, Wis. During a thunderstorm in the evening at La Crosse, Wis., a church spire and several trees were struck by lightning; damage by lightning was also reported in the surrounding country.

A heavy thunder and wind storm occurred at Larrabee, Iowa; a house was struck by lightning. A child was struck by lightning and killed near Concord, Iowa. At Sioux City, Iowa, a heavy thunderstorm from the south began 4 p. m.; heavy rain began 4.30 p. m., 1.40 inch falling in 1 hour; the temperature fell from 99° to 65°; considerable damage was caused by high wind and heavy rain, and lightning struck in several places. At Red Wing, Minn., a thunder and rain storm occurred in the early morning; a house was struck by lightning. A second storm occurred in the evening, during which the wind reached 36 miles per hour; damage was caused by wind, and trains were delayed by washouts. A northeast gale, with maximum wind velocity 60 miles per hour, occurred at Winnemucca, Nev., in the evening.

28th.—During a thunderstorm in the evening at New Haven, Conn., a house was struck by lightning and damaged to the extent of \$3,500. A thunderstorm, with heavy rain, occurred at Lynchburg, Va., in the afternoon; 2.00 inches of rain fell in 9 hours; the temperature fell from 96° to 68°; and hail fell south and southwest of Lynchburg. Crops about Springdale, Tenn., were injured by a thunder and wind storm. A wind squall damaged trees, etc., in northwest part of Indianapolis, Ind. Telephone wires were burned out during a thunderstorm at Alpena, Mich.

29th.—Several barns were struck by lightning and burned at Burlington, Vt. At Pittsburg, Pa., thunderstorms occurred at intervals during the afternoon; in the suburb of Highland Park 3 persons were killed and 4 were seriously injured, and much loss to property was reported. Four barns were struck by lightning at Edinboro, Pa. A house was struck by lightning at State College, Pa. Damage was caused by a thunderstorm at Harrisonburg, Va. At Portsmouth, Ohio, a house was struck and several persons were shocked by lightning.

30th.—A hailstorm occurred in the evening at Wahpeton, N. Dak.; glass was broken and wheat destroyed. A thunderstorm was reported at Oberlin, Kans.

31st.—A schooner was struck by lightning at Solomons, Md. Corn and cotton were damaged by hail south of Augusta, Ga. High wind caused damage about Poulan, Ga. A thunderstorm, with high wind and heavy rain, damaged crops, etc., about La Crosse, Wis. At Sparta, Wis., a heavy windstorm, with thunder, lightning, and small hail, was reported; a church steeple was struck, and one person was severely injured by lightning. A thunderstorm passed north of Dubuque, Iowa, between 5 and 6 p. m.; heavy rain flooded streets and damaged crops.

INLAND NAVIGATION.

FLOODS.

The month opened with rivers above the danger-line as follows: At La Crosse, Wis., 0.6 foot; Dubuque, Iowa, 0.4 foot; Davenport, Iowa, 1.7 foot; Keokuk, Iowa, 5.0 feet; Hannibal,

Mo., 3.8 feet; Helena, Ark., 1.0 foot; Arkansas City, Ark., 3.5 feet; Vicksburg, Miss., 5.4 feet, and New Orleans, La., 3.1 feet. On the 3d the Mississippi River fell below the danger-line at Dubuque, Iowa. On the 4th the river rose above

the danger-line at Saint Louis, Mo., and rose slowly at that point until the 8-9th, when it was 1.1 foot above the danger-line. On the 6th the Mississippi River fell below the danger-line at La Crosse, Wis., Davenport, Iowa, and Arkansas City, Ark. Floods were reported in streams in western Illinois. Tracks of the Illinois Central Railroad were flooded near New Orleans, La.

On the 9th water from Lake Pontchartrain flooded the rear portion of New Orleans. On the 10th the Warrior River in Alabama was rising rapidly. On the 10th and 11th damage was caused by flood along the Warrior and Tombigbee rivers. On the 12th the Mississippi River fell below the danger-line at Hannibal, Mo. Great damage was caused about Columbus, Miss., by high water in the Tombigbee River. On the 13th the Mississippi River fell below the danger-line at Keokuk, Iowa. Low lands about Nebraska City, Nebr., were flooded by a rise in the Missouri River. Floods continued along the Warrior and Tombigbee rivers, causing great destitution, and immense damage to the corn and cotton crops.

On the 15th the Mississippi River fell below the danger-line at Saint Louis, Mo. The Coosa River overflowed its banks at Gadsden, Ala., and the Alabama River was rising rapidly. On the 20th the Pearl River was reported the highest ever known at Jackson, Miss.; great loss of stock and crops was reported in swamp lands. On the 24th the Mississippi River fell below the danger-line at Helena, Ark., and Vicksburg, Miss. At the close of the month the rivers were below the danger-line, except at New Orleans, La., where it continued above the danger-line until August 4th.

STAGE OF WATER IN RIVERS.

The following table shows the danger-points at the various river stations; the highest and lowest stages for the month, with the dates of occurrence, and the monthly ranges:

Heights of rivers above low-water mark, July, 1892 (in feet and tenths).

Stations.	Danger-point on gauge.	Highest water.		Lowest water.		Monthly range.
		Height.	Date.	Height.	Date.	
<i>Red River.</i>						
Shreveport, La.....	29.9	21.6	1	6.0	31	15.6
<i>Arkansas River.</i>						
Fort Smith, Ark.....	22.0	8.1	7	3.0	31	5.1
Little Rock, Ark.....	23.0	11.5	10	8.5	28	3.0
<i>Missouri River.</i>						
Fort Buford, N. Dak.....	18.8	5	11.3	31	7.5	
Bismarck, N. Dak.....	14.7	7	6.8	31	7.9	
Pierre, S. Dak.....	14.0	9.3	9	3.9	31	5.4
Sioux City, Iowa.....	18.7	15.9	12	11.1	31	4.8
Omaha, Nebr.....	18.0	15.3	3, 14	11.1	31	4.2
Kansas City, Mo.....	21.0	19.8	5	14.0	31	5.8
<i>Mississippi River.</i>						
Saint Paul, Minn.....	14.0	8.4	1	4.5	17, 18	3.9
La Crosse, Wis.....	11.8	10.6	1, 3	5.1	26	5.5
Dubuque, Iowa.....	16.0	16.4	1	6.7	31	9.7
Davenport, Iowa.....	15.0	16.7	1	5.4	28-31	11.3
Keokuk, Iowa.....	14.0	19.0	1	6.3	31	12.7
Hannibal, Mo.....	17.0	20.8	3	8.0	31	12.8
Saint Louis, Mo.....	30.0	31.1	8, 9	19.0	31	12.1
Cairo, Ill.....	40.0	36.2	13, 14	21.3	31	14.9
Memphis, Tenn.....	33.0	28.8	17	18.5	31	10.3
Vicksburg, Miss.....	41.0	46.4	1	37.7	31	8.7
New Orleans, La.....	13.0	16.1	1	13.5	31	2.6
<i>Ohio River.</i>						
Parkersburg, W. Va.....	38.0	9.9	7	4.3	23, 28	5.6
Cincinnati, Ohio.....	45.0	15.2	8	8.0	29, 30	7.3
Louisville, Ky.....	24.0	7.7	7	4.9	31	2.8
<i>Cumberland River.</i>						
Nashville, Tenn.....	40.0	7.1	12	2.7	31	4.4
<i>Tennessee River.</i>						
Chattanooga, Tenn.....	33.0	12.4	7	3.8	31	8.6
<i>Monongahela River.</i>						
Pittsburg, Pa.....	29.0	7.8	6	2.7	11	5.1
<i>Savannah River.</i>						
Augusta, Ga.....	32.0	24.7	12	7.7	31	17.0
<i>Willamette River.</i>						
Portland, Oregon.....	15.0	18.5	4	8.5	31	10.0
<i>Susquehanna River.</i>						
Harrisburg, Pa.....	17.0	4.7	1	1.4	30	3.3
<i>Alabama River.</i>						
Montgomery, Ala.....	48.0	20.4	16	2.8	6	17.6

ATMOSPHERIC ELECTRICITY.

THUNDERSTORMS.

Description of the more severe thunderstorms reported for the month is given under "Local storms."

Thunderstorms were reported as follows: East of the Rocky Mountains they were reported in the greatest number of states, 34, on the 22d; in 33 on the 13th and 26th; in 32 on the 25th and 29th; in 31 on the 3d and 27th; in 20 to 30 on the 1st, 2d, 9th to 12th, 14th, 15th, 16th, 18th to 21st, 23d, 24th, 28th, 30th, and 31st; and in 10 to 19 on the 4th to 8th, and 17th.

East of the Rocky Mountains thunderstorms were reported on the greatest number of dates, 31, in Florida and Mississippi; on 20 to 30 in Alabama, Arkansas, Georgia, Illinois, Iowa, Kansas, Kentucky, Louisiana, Michigan, Missouri, Nebraska, New York, North Carolina, North Dakota, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Virginia, West Virginia, and Wisconsin; on 10 to 19 in Colorado, Indiana, Maine, Maryland, Massachusetts, Minnesota, Montana, New Hampshire, Ohio, Rhode Island, and Vermont; and on 9 in the District of Columbia and Indian Territory.

West of the Rocky Mountains thunderstorms were reported in Arizona on the 1st to 6th, 9th to 26th, 30th, and 31st; in California on the 3d, 4th, 5th, 26th, and 27th; in Colorado on the 1st, 6th to 19th, and 21st to 30th; in Idaho on the 28th; in Nevada on the 4th, 5th, 7th to 10th, 12th, 13th, 27th, and 28th; in New Mexico on the 1st, 4th to 18th, and 20th to 31st; in Utah on the 5th to 10th, 16th, 19th, and 27th to 31st; in Washington on the 3d, 4th, 6th, 11th, 14th, 15th, 19th, and 22d; and in Wyoming on the 1st, 2d, 3d, 6th to 9th, 21st, 27th, 28th, and 29th.

AUROSAS.

Exceptionally brilliant auroral displays over unusually ex-

tensive areas of visibility, for the season, were a feature of the month, the display of the night of the 16th, which was observed from Maine to Montana, and southward to North Carolina and Missouri, being one of the most remarkable ever noted during the summer months.

Auroral displays of July, 1892.

Date.	Station.	Extent of display.		Remarks.
		Azimuth.	Altitude.	
13-14	Buffalo, N. Y.	115 to 255	25	Arch of diffused white, with flashes of light to zenith.
13	Oswego, N. Y.	.....	40	Arch, with "merry dancers."
13	Chicago, Ill.	Cov'd 160	40	Diffused white light.
13-14	Alpena, Mich.	.....	.....	Arch of white light, with beams nearly to zenith.
13-14	Cheboygan, Mich.	135 to 215	45	Arch and brilliant streamers of purple and orange to zenith.
13	Detroit, Mich.	.....	70	Bright white arch formed, with streamers to zenith.
13	Grand Haven, Mich.	.....	15	Arch of white light, with "merry dancers" to zenith.
13	Marquette, Mich.	90 to 270	Zenith	In morning, wavy vertical folds of flashing light.
13	Marquette, Mich.	135 to 225	30	At night, irregular arch, with streamers.
13	Sault Ste. Marie, Mich.	180 to 270	30	Yellow and bluish light, with streamers.
13	La Crosse, Wis.	In north.	45	Arch of white light, with "merry dancers."
13	Milwaukee, Wis.	.....	.....	Bands, curtains, and streamers to zenith, with rapid movement from southeast to northwest.
13	Des Moines, Iowa	Cov'd 45	15	Pale gray diffused light, with one streamer in northwest.
13	Hannibal, Mo.	90 to 270	90	Arch of white light, with beams in north.
13	Yankton, S. Dak.	140 to 230	20	Two arches, with light moving from west to east.
13	Miles City, Mont.	.....	75	Column of rose color in southeast, moved slowly to northwest, and there formed an arch.
14	Spokane, Wash.	.....	20	Faint arch, with vertical beams in early morning.

Auroral displays of July, 1892—Continued.

Date.	Station.	Extent of display.		Remarks.
		Azimuth.	Altitude.	
16	Eastport, Me.		To s. of zenith.	Brilliant flashes of white light, with pink and violet tints in north.
16	Portland, Me.	Cov'd sky.		Very brilliant red in west, green in east, and white in south.
16	Manchester, N. H.		Zenith	Brilliant red in northwest, extended and changed to pink, yellow, and green.
16	Boston, Mass.	90 to 270	35 s. of zenith.	Yellow arch formed south of zenith, light changed to green and dark red.
16	Woods Holl, Mass.	100 to 260	80	Narrow band of white light.
16	Block Island, R. I.			Bright beams, with motion from west to east.
16	Narragansett Pier, R. I.	In north.		White arch, with beams to zenith.
16	New Haven, Conn.		Zenith	Pale green and white streamers in north; arch formed, crossing the zenith.
16-17	Buffalo, N. Y.	In north.	Zenith	Arch to zenith, with "merry dancers."
16	Ithaca, N. Y.	140 to 230	8	Low arch. Northern sky a blaze of red light, flashing to zenith.
16	Oswego, N. Y.		30	Double arch, with waves of pink light to within 20° of southern horizon.
16	Rochester, N. Y.	45 to 110	Zenith	Three bands of light, changing from pink to green.
16	Wedgwood, N. Y.	95 to 275	30 s. of zenith.	Diffused rosy light.
16	Atlantic City, N. J.	130 to 255	25	Sheets and streaks of light of steel blue, purple, and red.
16	Bridgeton, N. J.	135 to 225		White light, with "merry dancers."
16	Erie, Pa.	90 to 270	45	Straw-colored light, with flashes of light to 60°.
16	Harrisburg, Pa.	In north.		Beams and flashes of light to zenith.
16	Phoenixville, Pa.			Streamers, waves, and bands, with movement from east to northwest; colors crimson, green, and gray.
16	Philadelphia, Pa.	In north.		Billows and beams of straw, green, and pale red colors almost to zenith.
16	Pittsburg, Pa.	115 to 200	20	Beams, scarlet, green, and yellow.
16	Baltimore, Md.	130 to 190	25	An arch, with flashes of red light.
16	Washington, D. C.	Cov'd 90	20	Rainbow-like arch, with occasional streamers.
16	Big Stone Gap, Va.	In north.		Light red sheet, with white bands.
16	Louisburg, N. C.	In north.		White, rose, and orange, fading into gray.
16	Cincinnati, Ohio		60	Arch, with beams. Deep red, changing to yellow and green.
16	Cleveland, Ohio	Cov'd 180	Zenith	Arch, with white bands.
16	Grand Rapids, Ohio	In north.	45	Arch, with white light.
16	Chicago, Ill.	120 to 165	15	Arch.
16	Evanston, Ill.	140 to 220	15	Arch, with flashes of light.
16	Alpena, Mich.			Sky nearly covered with colored lights.
16-17	Cheboygan, Mich.	135 to 195	70	Colored streamers.

Auroral displays of July, 1892—Continued.

Date.	Station.	Extent of display.		Remarks.
		Azimuth.	Altitude.	
16	Detroit, Mich.	90 to 270	70	Beams of green, pink, and white, with movement from e. to w.
16	Grand Haven, Mich.	90 to 270	10	Incomplete corona formed in zenith.
16	Manistee, Mich.	60 to 170	70	Two arches, with beams to zenith, and pillars of light.
16-17	Marquette, Mich.	90 to 270	25	Corona formed in zenith, with streamers of various colors.
16-17	Port Huron, Mich.	In north.		Bright beams of yellow and green to zenith.
16	Sault Ste. Marie, Mich.			Sky covered with waves of colored light, "merry dancers." Telegraph instruments burned out.
16	La Crosse, Wis.	100 to 255	40	An arch over a curtain-like appearance, with "merry dancers" to zenith.
16	Milwaukee, Wis.	In n. & ne.	75	Immense fan-shaped light, with streamers. An arch formed, with waves of light.
16	Duluth, Minn.	Cov'd 160	Zenith	Beams and waves of diffused light to zenith.
16	Moorhead, Minn.		Zenith	A cone-shaped formation, presenting prismatic colors, extended to zenith, and shot out shafts of light nearly to horizon.
16	Red Wing, Minn.		20	An arch, with "merry dancers."
16	Saint Vincent, Minn.		45	Streamers of rosy red.
16	Davenport, Iowa	155 to 220	60	Arch, with pale yellow and rosy red colors.
16	Des Moines, Iowa		15	Arch, with brilliant streamers of green, orange, and purple.
16	Dubuque, Iowa		35	Flashes and slender beams of light, followed by arch.
16	Keokuk, Iowa	150 to 230	75	Arch, changing in color from white to red and green.
16-17	Kansas City, Mo.	145 to 225	18	Bright white light, with slender beams.
16-17	Bismarck, N. Dak.	170 to 250	30	Irregular pale beams shot upward and from east to west, and formed corona in zenith.
16	Fort Buford, N. Dak.	180 to 225		Diffused light formed into an arch.
16	Huron, S. Dak.		Nearly to zenith.	Beams of light in north and north-east.
16	Yankton, S. Dak.	150 to 220	20	Arch, with pale beams of light.
16	Omaha, Nebr.	In north.	20	Arch, with red and white streamers.
16	Miles City, Mont.		35	Arch of pale blue, with "merry dancers."
20	Manchester, N. H.	135 to 215	70	Rays of pink, yellow, and green.
20	Oswego, N. Y.	In north.	35	Faint arch of whitish color.
20	Erie, Pa.	Cov'd 135	45	Arch.
20	Sault Ste. Marie, Mich.	180 to 270	80	Green colored arch, with flashing beams of light.
20	Bismarck, N. Dak.	160 to 250	30	Arch.
24	Oswego, N. Y.	90 to 225	40	Arch, with streamers.
25	Alpena, Mich.	135 to 270	15	Arch, with rose-colored beams.
25	Saint Paul, Minn.		40	Pale light, with purple beams.
25	Omaha, Nebr.	160 to 230	40	Arch, with beams of light.
28	Saint Paul, Minn.	160 to 200	35	Pale light, with numerous slender beams.

STATE WEATHER SERVICES.

[Temperature in degrees Fahrenheit; precipitation, including melted snow, in inches and hundredths.]

The following extracts and summaries are republished from reports for July, 1892, of the directors of the various state weather services:

ALABAMA.

Temperature.—The mean was 1.7 below the normal; maximum, 98, at Brewton and Daphne, 30th; minimum, 60, at Healing Springs, 21st; greatest monthly range, 36, at Healing Springs; least monthly range, 20, at Citronelle.

Precipitation.—The average was 4.29 above the normal; greatest monthly, 14.43, at Mobile; least monthly, 3.38, at Bermuda.—*P. H. Mell, Observer, Weather Bureau, Auburn, director.*

ARIZONA.

Temperature.—Maximum, 118, at Fort Mohave, 1st; minimum, 44, at Holbrook, 3d and 4th; greatest monthly range, 56, at Reymert; least monthly range, 27, at Dos Cabezas.

Precipitation.—Greatest monthly, 6.15, at Payson; least monthly, 0.00, at Red Rock, Fort Mohave, Rancho del Pueblo, and Yuma.

Wind.—Prevailing direction, southwest.—*J. C. Hayden, Observer, Weather Bureau, Tucson, director.*

ARKANSAS.

Temperature.—The mean was 1.5 below the normal; maximum, 104, at Keesees Ferry, 20th and 21st; minimum, 52, at Fayetteville, 4th; greatest monthly range, 44, at Rogers; least monthly range, 24, at Greenville, Miss.

Precipitation.—The average was 0.09 below the normal; greatest monthly, 9.25, at Greenville, Miss.; least monthly, 1.09, at Madding.

Wind.—Prevailing direction, south.—*M. F. Locke, Commissioner of Agriculture, Little Rock, director; F. H. Clarke, Observer, Weather Bureau, assistant.*

CALIFORNIA.

Temperature.—Maximum, 114, at Lagrange, 31st; minimum, 34, at Yreka, 11th; greatest monthly range, 68, at San Ardo; least monthly range, 35, at Sweetwater Dam.

Precipitation.—Greatest monthly, 0.67, at Crescent City; least monthly, 0.00, at a number of places.

Wind.—Prevailing direction, west.—*J. A. Barwick, Observer, Weather Bureau, Sacramento, director.*

COLORADO.

Temperature.—The mean was normal; maximum, 109, at Orchard, 21st; minimum, 22, at Breckenridge, 2d; greatest monthly range, 66, at Orchard; least monthly range, 42, at Como, Georgetown, and Livermore.

Wind.—Prevailing direction, west.—*W. S. Miller, Observer, Weather Bureau, Denver, director.*

FLORIDA.

Temperature.—Maximum, 100, at Mullet Key, 4th, 15th, 24th, and 25th; minimum, 65, at Archer, 2d, 4th, 5th, and 6th; greatest monthly range, 32, at Archer; least monthly range, 16, at Merritts Island.

Precipitation.—Greatest monthly, 17.40, at Saint Andrews; least monthly, 0.08, at Jupiter.

Wind.—Prevailing direction, southeast.—*E. R. Demain, Observer, Weather Bureau, Jacksonville, director.*

GEORGIA.

Temperature.—Maximum, 102, at Waynesboro, 29th and 30th; minimum, 50, at Macon, 8th; greatest monthly range, 46, at Macon; least monthly range, 21, at Morgan.

Precipitation.—Greatest monthly, 11.76, at Eastman; least monthly, 2.10, at Columbus.

Wind.—Prevailing direction, southwest.—*Park Morrill, Local Forecast Official, Weather Bureau, Atlanta, director.*

IDAHO.

Temperature.—Maximum, 109, at Boise Barracks, 31st; minimum, 27, at Lake, 14th; greatest monthly range, 67, at Boise Barracks; least monthly range, 37, at Kootenai.

Precipitation.—Greatest monthly, 0.41, at Kootenai; least monthly, trace, at Lake and Martin.

Wind.—Prevailing direction, south.—*J. H. Smith, Observer, Weather Bureau, Idaho Falls, director.*

ILLINOIS.

Temperature.—The mean was 1.6 below the normal of the last 17 years; maximum, 107, at McLeansboro, 25th; minimum, 44, at Philo, 1st.

Precipitation.—The average was 0.73 above the normal of the last 14 years; greatest monthly, 6.49, at Pana; least monthly, 1.35, at Watseka.

Wind.—Prevailing direction, southwest.—*John Craig, Observer, Weather Bureau, Springfield, director.*

INDIANA.

Temperature.—The mean was 0.4 above the normal; maximum, 100, at Muncie, 26th, and at Angola, 24th; minimum, 43, at Cambridge City, 1st and 4th; greatest monthly range, 54, at Point Isabel; least monthly range, 28, at Butlerville.

Precipitation.—The average was 0.12 above the normal; greatest monthly, 4.92, at Lafayette; least monthly, 1.52, at Vevay.

Wind.—Prevailing direction, southwest.—*Prof. H. A. Huston, Lafayette, director; C. F. R. Wappenhans, Local Forecast Official, Weather Bureau, assistant.*

IOWA WEATHER AND CROP SERVICE.

Temperature.—The mean was slightly below the normal; maximum, 104, at Glenwood, 11th; minimum, 38, at Centerville, 1st; greatest monthly range, 58, at Centerville; least monthly range, 33, at Vinton.

Precipitation.—The average was about 1.00 above the normal; greatest monthly, 12.86, at Corydon; least monthly, 1.71, at Carroll.

Wind.—Prevailing direction, southeast.—*J. R. Sage, Des Moines, director; G. M. Chappel, Local Forecast Official, Weather Bureau, assistant.*

KANSAS.

Temperature.—The mean was 1.5 below the normal; maximum, 108, at Gibson, 23d, and at Gove City, 22d; minimum, 41, at Shields, 29th; greatest monthly range, 64, at Lakin; least monthly range, 36, at Altoona.

Precipitation.—The average was 0.15 below the normal; greatest monthly, 6.51, at Belleville; least monthly, 0.66, at Tribune.

Wind.—Prevailing direction, south.—*Prof. J. T. Lovewell, Topeka, director; T. B. Jennings, Observer, Weather Bureau, assistant.*

KENTUCKY.

Temperature.—The mean was 2.0 below the normal; maximum, 100, at Louisa and Central City, 25th; minimum, 48, at Harrodsburg, 5th; greatest monthly range, 61, at Harrodsburg; least monthly range, 26, at South Fork.

Precipitation.—The average was 0.50 below the normal; greatest monthly, 6.22, at Lexington; least monthly, 0.37, at Georgetown.

Wind.—Prevailing direction, southwest.—*Frank Burke, Observer, Weather Bureau, Louisville, director.*

LOUISIANA.

Temperature.—The mean was 2.3 below the normal; maximum, 101, at Schriever, 3d; minimum, 56, at Minden, 9th, and at Lake Charles, 31st; greatest monthly range, 42, at Minden; least monthly range, 20, at State Experiment Station.

Precipitation.—The average was 4.50 above the normal; greatest monthly, 23.08, at Jeanerette; least monthly, 1.75, at Girard.

Wind.—Prevailing direction, south.—*George E. Hunt, Local Forecast Official, Weather Bureau, New Orleans, director.*

MARYLAND.

Temperature.—Maximum, 102, at Kirkwood, Del., 27th and 28th; minimum, 50, at Boettcherville, 19th; greatest monthly range, 50, at Boettcherville; least monthly range, 27, at Solomons.

Precipitation.—Greatest monthly, 5.34, at Mount Saint Marys; least monthly, 1.10, at Boettcherville.

Wind.—Prevailing direction, southwest.—*Dr. William B. Clark, Johns Hopkins University, Baltimore, director; Prof. Milton Whitney, Maryland*

Agricultural College, secretary and treasurer; C. P. Cronk, Observer, Weather Bureau, in charge.

MICHIGAN.

Temperature.—The mean was 1.3 above the normal; maximum, 101, at Berlin, 26th; minimum, 32, at Hart, 3d; greatest monthly range, 61, at Gladwin and Ewart; least monthly range, 36, at Lake City and Arbela.

Precipitation.—The average was 0.30 above the normal; greatest monthly, 5.17, at Noble; least monthly, 1.10, at Ewart.

Wind.—Prevailing direction, southwest.—*E. A. Evans, Local Forecast Official, Weather Bureau, Detroit, director.*

MINNESOTA.

Temperature.—Maximum, 102, at Kinbrae, 18th; minimum, 36, at Eagle Bend, 1st; greatest monthly range, 57, at Kinbrae; least monthly range, 31, at Pine River Dam.

Precipitation.—Greatest monthly, 12.01, at Minneapolis; least monthly, 1.25, at Ash Creek.

Wind.—Prevailing direction, south.—*J. H. Harmon, Observer, Weather Bureau, Minneapolis, director.*

MISSISSIPPI.

Temperature.—The mean was 1.6 below the normal; maximum, 103, at Columbus, 31st; minimum, 60, at Waynesboro, 10th and 11th; greatest monthly range, 37, at Columbus; least monthly range, 21, at Ship Island.

Precipitation.—The average was 6.06 above the normal; greatest monthly, 23.87, at Macon; least monthly, 5.28, at Batesville.

Wind.—Prevailing direction, southwest.—*R. B. Fulton, Observer, Weather Bureau, University, director.*

MISSOURI.

Temperature.—The mean was 1.7 below the normal; maximum, 101, at Langdon, 20th, and at Pickering, 12th; minimum, 45, at Adrian, 4th, and at Columbia, 12th; greatest monthly range, 54, at Princeton; least monthly range, 28, at Fox Creek.

Precipitation.—The average was 1.22 above the normal; greatest monthly, 9.05, at Mexico; least monthly, 1.73, at Cairo, Ill.

Wind.—Prevailing direction, southwest.—*Levi Chubbuck, Secretary of State Board of Agriculture, Columbia, director; H. A. McNally, Observer, Weather Bureau, assistant.*

MONTANA.

Temperature.—Maximum, 112, at Glendive, 19th; minimum, 25, at Elk Park, 23d; greatest monthly range, 71, at Bozeman; least monthly range, 44, at Dearborn Canyon.

Precipitation.—Greatest monthly, 4.49, at Fort Buford, N. Dak.; least monthly, 0.19, at Horr.

Wind.—Prevailing direction, west.—*E. J. Glass, Observer, Weather Bureau, Helena, director.*

NEBRASKA.

Temperature.—Maximum, 113, at Thedford, 19th; minimum, 40, at Lexington, 2d; greatest monthly range, 72, at Lexington; least monthly range, 31, at Agee.

Precipitation.—Greatest monthly, 5.75, at Orleans; least monthly, 0.01, at Dunning.

Wind.—Prevailing direction, southeast.—*Prof. Goodwin D. Sweeney, Crete, director; G. A. Loveland, Observer, Weather Bureau, assistant.*

NEVADA.

Temperature.—The mean was 2.7 below the normal; maximum, 115, at Belleville, 5th; minimum, 30, at Sunnyside, 12th, and at Elko, 28th.

Precipitation.—The average was 0.14 above the normal; greatest monthly, 0.67, at Monitor Ranch; least monthly, 0.00, at a number of stations.—*Prof. Charles W. Friend, Carson City, director; F. A. Carpenter, Observer, Weather Bureau, assistant.*

NEW ENGLAND.

Temperature.—The mean was 0.7 above the normal; maximum, 102, at Lawrence, 25th, and at Taunton(d), 29th; minimum, 24, at West Milan, 5th; greatest monthly range, 61, at Stratford; least monthly range, 29, at Nantucket.

Precipitation.—The average was 1.03 below the normal; greatest monthly, 7.66, at Burlington; least monthly, 0.91, at Stratford and Nantucket.

Wind.—Prevailing direction, southwest.—*J. Warren Smith, Observer, Weather Bureau, Boston, Mass., director.*

NEW JERSEY.

Temperature.—The mean was 0.2 below the normal; maximum, 105, at Plainfield, Camden, and New Brunswick, 26th; minimum, 44, at Dover, 17th, and at Allaire and Franklinville, 18th; greatest monthly range, 56, at Plainfield and Franklinville; least monthly range, 33, at Asbury Park and Atlantic City.

Precipitation.—The average was 0.29 below the normal; greatest monthly, 7.96, at Franklinville; least monthly, 2.38, at Hanover.

Wind.—Prevailing direction, southwest.—*E. W. McGann, Observer, Weather Bureau, New Brunswick, director.*

NEW MEXICO.

Temperature.—Maximum, 105, at Coolidge, 2d, at Embudo, 15th, and at Los Lunas, 13th; minimum, 30, at Coolidge, 25th, and at Halls Peak, 4th; greatest monthly range, 75, at Coolidge; least monthly range, 33, at Santa Fe.

Precipitation.—Greatest monthly, 3.92, at Chama; least monthly, 0.20, at Coolidge.

Wind.—Prevailing directions, west and southwest.—*H. B. Hersey, Observer, Weather Bureau, Santa Fe, director.*

NEW YORK.

Temperature.—The mean was 0.2 below the normal; maximum, 99, at West Point, 27th, and at Baldwinville, 29th; minimum, 36, at South Kortright, 17th; greatest monthly range, 59, at West Point; least monthly range, 34, at Buffalo.

Precipitation.—The average was 0.61 above the normal; greatest monthly, 8.44, at Hess Road Station; least monthly, 1.98, at Liberty.

Wind.—Prevailing direction, southwest.—*Prof. E. A. Fuertes, Dean of the College of Civil Engineering, Cornell University, Ithaca, director; R. M. Hardinge, Observer, Weather Bureau, assistant.*

NORTH CAROLINA.

Crops were injured during the first half of the month by excessive rains.

Temperature.—The mean was 1.8 below the normal; maximum, 103, at Chapel Hill, 25th and 28th, and at Southern Pines, 28th, 30th, and 31st; greatest monthly range, 53, at Southern Pines; least monthly range, 22, at Hatteras.

Precipitation.—The average was 0.33 above the normal; greatest monthly, 10.83, at Southern Pines; least monthly, 2.37, at Soapstone Mount.

Wind.—Prevailing direction, southwest.—*Dr. Herbert B. Battle, Raleigh, director; C. F. von Herrmann, Observer, Weather Bureau, assistant.*

NORTH DAKOTA.

Temperature.—The mean was 0.3 above the normal; maximum, 108, at Medora, 22d; minimum, 31, at Woodbridge, 3d; greatest monthly range, 74, at Medora; least monthly range, 39, at Saint Johns.

Precipitation.—The average was 0.37 above the normal; greatest monthly, 5.23, at Dawson; least monthly, 1.17, at White Earth.

Wind.—Prevailing direction, southeast.—*W. H. Fallon, Observer, Weather Bureau, Bismarck, director.*

OHIO.

Temperature.—The mean was normal; maximum, 103, at Waverly and West Milton, 25th; minimum, 40, at Orangeville, 17th; greatest monthly range, 58, at Kenton; least monthly range, 41, at Marietta.

Precipitation.—The average was 0.37 above the normal; greatest monthly, 7.96, at Carrollton; least monthly, 1.36, at Dayton.

Wind.—Prevailing direction, southwest.—*Prof. B. F. Thomas, Columbus, director; C. M. Strong, Observer, Weather Bureau, secretary and assistant.*

OKLAHOMA.

Temperature.—Maximum, 112, at Lehigh, 21st; minimum, 49, at Gate City, 4th; greatest monthly range, 59, at Gate City; least monthly range, 30, at Healdton.

Precipitation.—Greatest monthly, 4.54, at Purcell; least monthly, 1.15, at Mangum.

Wind.—Prevailing direction, south.—*Louis Dorman, Observer, Weather Bureau, Oklahoma City, director.*

OREGON.

Temperature.—Maximum, 105, at Canyon City and Newbridge; minimum, 28, at Crook.

Precipitation.—Greatest monthly, 1.13, at Gardiner; least monthly, 0.00, at a number of stations.—*Hon. H. E. Hayes, Master State Grange, Portland, director; B. S. Pague, Local Forecast Official, Weather Bureau, assistant.*

PENNSYLVANIA.

Temperature.—The mean was 0.2 below the normal; maximum, 103, at Hamburg, Quakertown, and Philadelphia, 26th; minimum, 38, at Wellsboro, 5th; greatest monthly range, 58, at Wellsboro; least monthly range, 35, at Lancaster.

Precipitation.—The average was about normal; greatest monthly, 8.59, at York; least monthly, 2.15, at Wellsboro.

Wind.—Prevailing direction, west.—*Under direction of the Franklin Institute, Philadelphia; H. L. Ball, Observer, Weather Bureau, assistant.*

SOUTH CAROLINA.

Temperature.—Maximum, 102, at Florence, 30th; minimum, 51, at Cheraw, 8th; greatest monthly range, 48, at Cheraw; least monthly range, 27, at Hardeeville.

Precipitation.—Greatest monthly, 13.47, at Cheraw; least monthly, 4.29, at Greenwood.

Wind.—Prevailing direction, southwest.—*A. P. Butler, Observer, Weather Bureau, Columbia, director.*

SOUTH DAKOTA.

Temperature.—The mean was 0.7 above the normal; maximum, 104, at Alexandria, 20th and 22d; minimum, 35, at Cross, 2d; greatest monthly range, 65, at Parkston; least monthly range, 37, at Ashcroft.

Precipitation.—The average was 1.46 below the normal; greatest monthly, 7.76, at Aberdeen; least monthly, 0.38, at Kimball.

Wind.—Prevailing direction, southeast.—*S. W. Glenn, Local Forecast Official, Weather Bureau, Huron, director.*

TENNESSEE WEATHER AND CROP SERVICE.

Temperature.—The mean was about normal; maximum, 98, at Dyersburg, 19th and 24th; minimum, 58, at Jacksonboro, 2d, at Greenville, 8th, and at Springdale, 17th; greatest monthly range, 38, at Springdale; least monthly range, 25, at McMinnville.

Precipitation.—The average was 1.79 above the normal; greatest monthly, 10.33, at Jackson; least monthly, 2.07, at Sweetwater.

Wind.—Prevailing directions, east and northwest.—*J. B. Marbury, Local Forecast Official, Weather Bureau, Nashville, director.*

TEXAS.

Temperature.—The mean was 0.2 below the normal; maximum, 109, at Fort Hancock, 15th, 16th, and 20th; minimum, 48, at Fort Hancock, 28th; greatest monthly range, 61, at Fort Hancock.

Precipitation.—The average was 0.44 below the normal; greatest monthly, 8.49, at Orange; least monthly, 0.00, at Menardville.

Wind.—Prevailing direction, southeast.—*D. D. Bryan, Galveston, director; I. M. Cline, Local Forecast Official, Weather Bureau, assistant.*

UTAH.

Temperature.—Maximum, 110, at Saint George, 31st; minimum, 27, at Soldiers Summit, 1st and 16th; greatest monthly range, 68, at Soldiers Summit; least monthly range, 41, at Salt Lake City.

Precipitation.—Greatest monthly, 1.03, at Mount Carmel; least monthly, 0.00, at Stockton.

Wind.—Prevailing direction, southeast.—*G. N. Salisbury, Observer, Weather Bureau, Salt Lake City, director.*

VIRGINIA.

Temperature.—Maximum, 106, at Nottoway, 27th; minimum, 43, at Dale Enterprise, 5th; greatest monthly range, 57, at Nottoway; least monthly range, 32, at Hot Springs and Warm Springs.

Precipitation.—Greatest monthly, 8.27, at Norfolk; least monthly, 0.79, at Mossing Ford.

Wind.—Prevailing direction, southwest.—*Dr. E. A. Craighill, Lynchburg, director; J. N. Ryker, Observer, Weather Bureau, assistant.*

WASHINGTON.

Hot weather and dry winds injured wheat east of the Cascades.

Temperature.—The mean was 1.2 below the normal; maximum, 104, at Fort Spokane, 31st; minimum, 35, at Centerville and Rosalia, 7th, and at Waterville, 7th and 12th; greatest monthly range, 64, at Fort Spokane; least monthly range, 24, at Olga.

Precipitation.—The average was 0.08 above the normal; greatest monthly, 2.58, at Eatonville; least monthly, 0.00, at Fort Simcoe.

Wind.—Prevailing direction, southwest.—*E. B. Olney, Observer, Weather Bureau, Olympia, director.*

WEST VIRGINIA.

Temperature.—Maximum, 98, at Martinsburg, 26th and 27th, at Moorefield, 24th and 26th, at Spencer, 25th, and at Charleston, 26th; minimum, 41, at Davis, 6th; greatest monthly range, 51, at Davis; least monthly range, 34, at Danville.

Precipitation.—Greatest monthly, 7.20, at Central Station; least monthly, 1.21, at Piedmont.

Wind.—Prevailing direction, southwest.—*W. W. Dent, Observer, Weather Bureau, Parkersburg, director.*

WISCONSIN.

Temperature.—The mean was about 1.0 above the normal except in the west-central counties, where it was 1.0 to 2.0 below; maximum, 100, at Centuria, 22d; minimum, 38, at Crandon, 4th, at Florence, 15th, and at Plover, 16th.

Precipitation.—Greatest monthly, 9.90, at Hudson; least monthly, 1.14, at Oconomowoc.

Wind.—Prevailing direction, southwest.—*W. L. Moore, Local Forecast Official, Weather Bureau, Milwaukee, director.*

WYOMING.

Temperature.—Maximum, 112, at Casper, 6th; minimum, 31, at Saratoga, 3d; greatest monthly range, 64, at Casper and Wheatland; least monthly range, 47, at Lander.

Precipitation.—Greatest monthly, 2.20, at Lander; least monthly, trace, at Saratoga.

Wind.—Prevailing direction, west.—*E. M. Ravenscraft, Observer, Weather Bureau, Cheyenne, director.*

METEOROLOGICAL TABLES.

Meteorological record of Army post surgeons, voluntary, and other co-operating observers, July, 1892.

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean.			Max.	Min.	Mean.			Max.	Min.	Mean.	
Alabama.					Arizona—Cont'd.					California—Cont'd.				
Bermuda *†	94	70	78.2	3.53	Woodruff †	113	80	94.7	0.00	Florin *†	101	52	70.4	0.00
Bessemer	94	64	78.6	7.29	Yuma *†	113	80	94.7	0.00	Folsom City a *†	106	62	80.4	0.00
Brewton †	96	67	78.7	12.26						Folsom City b	101	62	80.4	0.00
Carrollton *†	91	67	75.5	12.40	Arkansas.					Forestville †	101	62	80.4	0.00
Citronelle †	90	70	79.0	8.10	Arkadelphia †	104	55	78.3	3.71	Fort Bidwell	94	41	66.9	0.15
Claiborne Landing †	98	66	79.8	6.32	Arkansas City †	104	55	78.3	3.71	Fresno *†	115	68	86.4	0.00
Cordova †	98	66	79.8	6.32	Black Rock *†	98	56	80.4	5.25	Fruto *†	106	62	80.7	0.00
Daphne †	98	66	79.8	12.14	Brinkley †	98	56	79.3	1.70	Galt *†	104	69	84.6	0.00
Decatur †	94	58	75.8	7.50	Camden †	93	58	78.3	4.34	Georgetown †	96	50	72.0	T.
Decatur †	94	58	75.8	6.56	Camden †	93	58	78.3	2.76	Gilroy †	105	55	68.4	0.00
Double Springs †	88	60	75.6	5.25	Conway †	97	61	79.4	3.99	Girard †	99	60	77.0	0.00
Enfauia †	94	68	79.4	11.09	Dallas †	97	61	79.4	2.21	Glen Ellen †	102	51	69.4	0.00
Evergreen †	92	69	79.6	9.96	Dardanelle †	95	59	76.9	2.70	Goshen †	103	62	79.5	0.00
Florence †	93	63	76.9	12.26	Eldorado †	94	59	76.9	5.30	Grass Valley a	89	44	65.6	0.00
Florence †	93	63	76.9	12.26	Fayetteville †	94	59	76.9	2.05	Grass Valley b	89	44	65.6	0.00
Fort Deposit †	95	65	79.5	10.61	Forrest †	94	59	76.9	4.95	Haywards †	95	54	67.4	T.
Gadaden †	95	65	79.5	10.61	Fulton †	95	60	78.0	1.96	Hollister †	105	49	65.6	0.00
Geneva †	95	70	82.1	5.18	Gaines Landing †	95	60	78.0	5.54	Hornbrook †	100	60	72.7	0.00
Greensboro †	90	65	78.0	10.37	Harrison †	95	60	78.0	4.11	Huron †	115	65	85.0	0.00
Healing Springs †	90	60	78.0	7.46	Helena †	95	60	78.0	5.15	Independence †	99	53	77.4	T.
Highland Home †	92	69	77.6	9.19	Helena †	95	60	78.0	4.44	Indio †	106	77	91.6	0.00
Jasper †	93	63	76.4	9.82	Hope †	100	60	79.9	4.44	Ione †	102	60	75.5	0.00
Livingston a †	89	64	76.4	10.45	Hot Springs	99	59	78.5	3.70	Iowa Hill †	99	60	74.3	0.00
Livingston b †	89	64	76.4	10.45	Lead Hill †	104	54	81.3	3.14	Julian †	98	41	66.8	0.00
Lynn †	95	67	79.4	10.13	Lonoke †	100	68	81.3	2.50	Keeler †	95	51	72.4	0.00
Marion †	95	67	79.4	10.13	Madding †	100	68	81.3	1.09	Keene †	98	70	83.8	0.00
Mayville †	93	62	77.5	5.97	Malvern †	95	62	79.8	0.65	Keene †	98	70	83.8	0.00
Mount Willing †	91	68	77.4	9.01	Mount Nebo †	89	61	78.7	3.59	Kennedy Gold	102	60	77.5	0.00
Newburg †	93	62	76.2	9.55	New Gascony †	95	70	80.4	2.58	Mine †	99	57	73.2	0.00
Opelika †	96	64	81.4	6.31	Newport †	100	62	79.9	4.96	King City †	110	46	65.3	0.00
Oxanna †	93	64	76.5	4.72	Newport †	100	62	79.9	4.96	Kingsburg †	105	65	80.2	0.00
Pine Apple †	96	67	81.2	7.62	Oscar †	93	63	77.8	7.38	Knights Landing †	107	54	76.0	0.00
Pittsboro †	94	70	78.3	4.50	Osark †	101	60	82.4	2.83	Lagrange †	114	54	79.8	0.00
Pushmataha †	90	68	77.2	10.46	Osone †	94	62	75.0	2.49	Lathrop †	106	60	74.2	0.00
Selma †	93	63	76.4	8.36	Pine Bluff †	96	66	81.6	3.63	Laurel †	103	50	69.1	0.00
Sturdevant †	93	63	76.4	8.36	Prescott †	93	62	80.4	3.08	Lemoore †	109	60	81.9	0.00
Talladega †	93	63	76.4	8.36	Rogers †	96	54	76.2	1.14	Lick Observatory	87	49	66.9	0.00
Talladega Falls †	93	63	76.4	8.36	Russellville †	97	62	81.0	2.39	Livermore †	104	50	67.0	0.00
Thomasville †	95	66	81.0	6.79	Stuttgart †	96	64	79.8	4.10	Livingston †	108	65	80.8	0.00
Tuscumbia a †	94	64	77.1	17.95	Texarkana †	99	64	82.2	3.20	Lodi	104	65	81.6	0.00
Tuscumbia b †	97	61	78.8	8.57	Washington †	86	70	79.4	0.00	Long Beach †	106	68	83.3	0.00
Union Springs †	96	65	79.7	6.30						Los Angeles †	86	52	63.3	0.00
Union Springs †	94	67	80.0	6.78	California.					Los Banos †	96	58	70.6	0.00
Valley Head †	91	59	74.4	5.62	Alcalde †	100	43	63.9	0.00	Los Gatos a †	102	64	81.9	0.00
Wiggins †	102	67	76.1	7.47	Almaden †	111	63	85.0	0.00	Los Gatos b	101	54	68.6	0.00
Wilsonville †	93	63	76.4	8.36	Alvarado †	97	41	63.8	0.04	Mammoth Tank †	104	46	67.4	0.00
					Anaheim †	90	60	72.6	0.00	Martinez †	120	76	93.0	0.00
					Antioch †	101	65	77.6	0.00	Marysville †	94	49	67.1	0.00
					Aptos †	90	51	69.2	0.00	Menlo Park †	100	63	71.9	0.00
					Arcata †	90	51	69.2	0.00	Merced †	102	52	67.9	0.00
					Athlone †	110	59	80.6	0.00	Milton (near) †	111	58	79.3	0.00
					Auburn †	96	60	75.6	0.00	Modesto †	106	55	80.8	0.00
					Bakersfield †	108	52	77.4	0.00	Mohave †	102	63	80.0	0.00
					Beaumont †	103	54	77.4	0.00	Monson †	112	72	84.8	0.00
					Belmont †	99	52	73.3	0.00	Montague †	105	65	84.3	0.00
					Berendo †	108	60	85.0	0.00	Monterey †	97	63	75.1	0.35
					Berkeley †	92	49	65.3	0.01	Monterey (Hotel	86	52	64.3	0.00
					Bishop Creek †	100	64	82.3	0.00	del Monte) †	77	52	61.8	0.00
					Boca †	90	38	58.5	0.00	Napa City a †	105	50	66.8	0.00
					Borden †	106	63	79.6	0.00	Napa City b	98	49	65.4	0.00
					Boulder Creek †	104	44	62.6	0.00	National City †	88	53	65.6	0.00
					Brentwood †	101	60	79.1	0.00	Needles †	113	69	94.0	0.10
					Brighton †	109	50	70.5	0.00	Nevada City †	106	54	68.2	0.00
					Byron †	102	58	78.0	0.00	Newark †	96	54	68.2	0.00
					Callente †	105	55	85.1	0.00	Newcastle †	98	52	65.9	0.00
					Calistoga †	104	53	72.3	0.00	Newhall †	104	50	75.2	0.00
					Castroville †	90	52	65.1	0.00	Newman †	111	57	75.1	0.00
					Chico †	105	59	77.1	0.00	Niles †	106	60	78.9	0.00
					Cisco †	80	40	60.8	0.00	Nordhoff †	99	52	71.7	0.00
					Citrus †	108	72	89.8	0.00	Norwalk †	104	43	68.6	0.00
					Claremont †	92	49	70.8	0.00	Oakdale †	94	60	72.2	0.00
					Colfax †	99	53	72.2	0.00	Oakland a	106	53	74.8	0.00
					Colton †	108	50	70.5	0.00	Oakland b	89	48	63.8	T.
					Corning †	103	62	78.4	0.00	Ogilby †	80	54	62.2	0.00
					Crescent City	103	62	78.4	0.00	Oleta †	119	70	98.4	0.00
					Crofton †	104	59	76.3	0.00	Ontario †	97	54	73.2	0.00
					Davisville a †	104	58	77.0	0.00	Orland †	109	56	74.9	0.00
					Davisville b	101	48	69.8	0.00	Oroville †	109	66	84.1	0.00
					Delano †	110	60	82.7	0.00	Pajaro †	109	63	81.0	0.00
					Delta †	104	60	78.4	0.10	Palermo †	79	52	63.1	0.00
					Downey †	95	56	71.4	0.00	Palm Springs †	116	50	73.2	0.00
					Drytown †	103	45	72.8	0.00	Pasadena †	97	51	65.7	T.
					Duarte †	101	51	66.7	0.00	Paso Robles †	104	53	73.1	0.00
					Dunnigan †	104	64	83.4	0.00	Petaluma †	99	55	65.6	0.00
					Dunsmuir †	98	48	69.5	0.35	Placerville a	100	60	75.5	0.00
					Edgewood †	92	49	68.8	0.80	Placerville b	100	44	66.5	0.00
					El Casco †	113	49	80.8	0.00	Pleasanton a	105	55	69.6	0.00
					Eldorado †	103	61	77.7	0.00	Pleasanton b	104	40	65.6	0.00
					Elmira †	102	55	73.1	0.00	Pomona †	100	50	72.1	0.00
					El Verano †	102	55	69.5	0.00	Porterville †	112	76	86.9	0.00
					Emigrant Gap †	85	43	62.7	0.00	Puerto †	94	55	70.9	0.00
					Esparto †	104	54	73.9	0.00	Red Bluff †	106	60	78.3	0.00
					Exeter †	105	61	81.0	0.00	Redding †	106	65	84.5	T.
					Farmington †	107	56	76.4	0.00	Redlands †	101	55	78.8	0.03
					Felton †	106	50	69.3	0.00	Rocklin †	98	70	81.0	0.00
					Fernando †	99	55	71.7	0.00	Ramsey †	106	56	75.9	0.00
					Florence †	86	61	72.3	0.00	Sacramento a	106	60	83.8	0.00
										Sacramento b	95	46	69.0	0.00

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
Colorado—Cont'd	°	°	°	Ins.	Florida—Cont'd	°	°	°	Ins.
Gold Hill	98	55	78.8	2.78	Tallahassee†	93	68	76.5	7.68
Grand Junction	98	47	66.6	0.71	Tarpon Springs†	92	69	81.5	5.94
Greenhorn†	93	46	66.6	1.68	Georgia.				
Grover†	92	47	69.1	0.86	Adairsville†	96	60	78.0	6.16
Hugo†	102	42	72.8	...	Albany†	96	68	80.7	4.07
Husted†	95	42	67.8	4.93	Alapaha†	96	66	79.9	4.70
Jefferson*†	86	36	54.1	3.33	Americus†	96	67	81.4	6.56
Julesburg†	101	43	71.9	3.44	Athens†	94	59	77.1	4.89
La Jara†	88	40	65.0	1.47	Athens b†	96	59	78.2	5.03
Lamar†	106	54	77.8	1.21	Bainbridge†	96	67	81.4	9.22
La Porte	...	...	...	2.04	Blackshear†	96	69	80.2	4.66
Las Animas†	102	52	76.0	1.09	Blakely†	95	70	79.1	7.33
Lavender	...	...	...	3.55	Camak†	97	60	78.6	4.53
Lay*†	100	52	74.0	0.30	Canton†	...	...	...	6.60
Le Roy*†	100	48	73.5	3.07	Cordele†	100	60	81.4	5.89
Leslie	...	...	...	3.43	Columbus†	91	67	78.7	2.10
Livermore	89	47	66.8	0.76	Dahlonega†	89	58	74.0	8.21
Longmont†	94	47	68.2	1.28	Darien†	99	70	82.4	4.57
Loveland	...	...	...	1.29	Diamond†	92	57	73.8	5.99
Manhattan	...	...	...	1.40	Dublin†	98	65	80.6	10.52
Middle Box Elder	...	...	...	1.47	Eastman†	96	67	78.1	11.76
Moraine†	83	36	60.0	2.17	Elberton†	...	...	...	4.30
Orchard	109	43	75.2	1.06	Fleming†	101	...	...	5.14
Pagoda (near)†	94	32	64.6	0.77	Folkston†	95	70	82.3	4.10
Paonia†	...	...	...	1.01	Forsyth†	96	66	79.2	7.52
Parachute†	97	50	73.4	0.46	Fort Gaines†	94	67	79.0	11.46
Robb†	105	47	75.2	4.75	Gainesville†	94	58	77.2	6.21
Rocky Ford†	102	50	75.1	1.99	Gillsville*†	92	63	76.8	6.44
Saint Cloud	...	...	...	0.00	Griffin†	98	64	78.8	4.75
Sanborn	...	...	...	2.38	Hawkinsville†	99	58	75.2	7.62
San Luis†	91	37	65.8	1.34	Hephzibah*†	92	66	77.9	7.30
Seissors	...	...	...	1.03	Homerville†	95	62	79.2	8.28
Bedgwick	...	...	...	3.06	Lafayette†	97	61	77.6	10.15
Sheridan Lake*†	97	51	74.8	1.90	Lagrange†	92	62	77.6	5.45
Smoky Hill Mine†	87	40	63.0	2.83	Lincolnton†	96	60	78.0	4.00
Springfield†	...	...	...	2.11	Louisville†	101	63	79.2	3.50
Stamford	...	...	...	3.20	Lumpkin†	97	67	79.4	4.91
Steamboat Spring†	94	30	67.0	1.0	McArthur†	94	67	79.2	4.96
Surface Creek†	87	45	71.6	1.24	Macon†	96	59	78.3	4.87
Table Rock†	97	41	63.8	5.73	Marion†	92	59	74.8	3.85
T. S. Ranch†	98	48	73.6	0.64	Marion†	95	59	79.6	6.79
Thon†	102	39	70.4	2.52	Marshallville†	93	66	77.8	6.49
Twin Lakes	...	...	...	2.20	Millersville†	100	63	80.0	4.93
Vilas	...	...	...	1.96	Millersville†	93	...	...	6.68
Wallet†	...	...	...	4.95	Morgan†	95	54	77.5	2.64
Ward District	...	...	...	3.13	Newman†	94	60	78.8	4.50
Waterville	...	...	...	0.98	Point Peter*†	94	60	77.8	5.39
Wilke	...	...	...	0.44	Poultan†	97	66	77.8	8.47
Yuma	...	...	...	4.44	Quitman b†	98	66	80.6	8.47
Zuck	...	...	...	0.92	Reasat†	...	...	...	9.23
Connecticut.					Rome†	94	62	78.3	5.78
Canton	95	46	71.0	4.97	Statesboro†	94	67	81.2	10.59
Colchester	96	41	69.8	3.33	Thomasville†	97	67	79.8	7.37
Falls Village	...	...	...	6.09	Toccoa†	96	58	77.0	8.22
Hartford b	...	...	...	3.39	Union Point†	94	63	78.0	3.80
Lake Konomoo	...	...	...	2.76	Washington†	90	60	79.0	4.98
Lebanon	...	...	...	2.82	Way Cross†	94	68	80.6	3.31
Middletown	98	49	73.6	2.63	Waynesboro†	102	63	79.8	5.87
New Hartford a*†	96	49	66.6	4.82	West Point	94	66	80.6	8.14
New Hartford b†	...	...	...	3.86	Idaho.				
N. Grosvenor Dale†	95	48	71.0	4.54	American Falls†	99	39	67.8	0.39
North Woodstock	...	...	...	4.70	Boise Barracks	100	42	70.3	0.00
Northwalk b	94	46	70.8	4.75	Fort Sherman	96	41	65.3	1.11
South Manchester	...	...	...	3.42	Garden Valley†	98	40	65.4	0.00
Stevenson	...	...	...	4.21	Henry's Lake†	90	27	57.4	0.00
Storrs†	92	44	69.2	3.25	Kootenai†	90	45	65.9	6.41
Thompson†	88	47	68.8	...	Martin†	98	34	62.3	6.2
Voluntown†	93	46	70.4	3.00	Moscow*†	95	50	64.9	0.19
Wallington†	93	50	71.4	3.47	Ruthburg*†	101	48	65.3	0.12
Waterbury	93	50	71.4	4.37	Illinois.				
West Simsbury	...	...	...	4.47	Alton†	...	...	...	5.35
Delaware.					Atwood†	100	50	...	6.05
Dover†	100	56	75.3	4.35	Aurora†	94	45	71.4	4.48
Kirkwood*†	102	...	...	78.9	Beaumont†	...	...	...	5.63
Seaford†	100	53	75.8	2.90	Bloomington†	100	55	71.9	4.68
District of Columbia.					Carlisle†	96	49	74.4	4.13
Long Bridge†	97	61	76.5	6.40	Charleston	98	47	75.4	3.35
Rec'ing Reserv'r*	94	61	76.2	4.86	Chester†	94	52	75.0	5.56
West Washington†	102	57	77.7	5.02	Collinsville†	93	56	75.2	3.11
Florida.					Decatur*†	97	45	72.5	3.84
Amelia†	90	68	79.2	3.95	Dixon†	97	45	74.2	3.38
Archer†	97	65	80.0	4.85	East Peoria†	98	46	77.0	3.20
Avon Park*†	96	72	78.6	6.34	Ellsworth†	97	54	77.6	3.20
Bristol†	92	70	79.9	2.85	Fairmount†	98	55	78.6	4.77
Brooksville†	92	69	80.2	2.76	Fort Sheridan	94	49	69.5	2.54
Eustis†	98	66	81.0	2.76	Golconda†	92	62	76.2	4.10
Federal Point†	94	68	79.8	2.50	Greenville†	100	54	75.6	3.10
Fort Meade†	94	68	79.8	3.41	Griggsville†	97	51	74.6	5.94
Gainesville†	100	62	82.8	2.36	Havana†	96	53	75.0	2.29
Gramere	93	60	81.0	...	Hennepin†	100	45	73.8	4.22
Green Cove Sp'gs†	95	66	81.0	5.72	Irishtown†	...	...	...	4.21
Homeland†	95	66	81.0	5.72	Jordana Grove†	96	52	75.9	2.95
Hypoluxo*†	97	78	85.5	0.21	Kankakee†	94	50	71.4	2.51
Kinsman City†	97	78	85.5	0.21	Louisville*†	98	52	75.4	3.59
Manatee†	93	67	79.6	9.58	Manchester*†	96	56	71.9	...
Merritt Island†	90	74	81.3	5.03	Martinsville†	96	51	74.4	2.62
Mullet Key†	100	72	81.3	2.02	Mascoutah†	99	52	74.2	3.80
Ocala*†	93	72	80.3	2.77	Matteson†	100	53	74.2	3.80
Orlando†	99	70	80.4	1.63	McLeansboro†	107	54	77.7	1.85
Oxford*†	92	70	82.7	17.40	New Haven†	...	...	...	1.91
St. Andrews Bay†	94	72	82.7	17.40	Olney a†	99	53	75.1	3.71
St. Francis B'ke†	94	69	79.9	1.13	Olney b†	103	53	75.1	3.71
St. Petersburg†	95	71	82.4	4.50	Ottawa†	98	49	74.2	4.92
					Palestine†	97	48	74.0	2.47

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
Illinois—Cont'd.					Iowa—Cont'd.				
Pana*†	100	60	77.1	6.49	Indianola†	93	50	73.4	2.50
Paris†	97	60	77.0	3.50	Iowa City†	96	44	73.0	6.20
Peoria†	98	50	76.9	3.54	Iowa Falls†	92	46	71.5	7.41
Philol†	97	44	74.2	3.10	Keosauqua†	94	41	74.0	5.55
Quincy†	...	...	...	4.13	Larrabee†	99	43	72.8	2.96
Rantoul*†	104†	58	75.9	3.51	Le Claire†	...	...	...	6.29
Riley†	91	48	71.0	4.78	Logan†	100	51	76.3	4.55
Rockford†	94	50	72.0	4.32	Maquoketa*†	96	55	73.4	6.48
Rushville†	98	48	73.1	5.95	Marshall†	90	50	72.1	6.66
Saint John*†	94	64	77.6	2.08	Mason City†	95	47	71.4	5.94
Shawneetown†	...	...	...	2.30	Maxon*†	102	58	76.8	5.10
Sycamore*†	93	55	71.9	2.56	Mechanicsville	92	46	71.4	4.64
Walnut†	99	48	75.3	5.41	Milton	...	...	...	6.70
Warsaw†	...	...	...	2.31	Monticello*†	95	43	72.6	4.39
Watsaka†	...	...	73.1	1.35	Mount Ayr†	94	49	74.7	8.17
White Hall*†	92	54	73.4	6.16	Mount Pleasant a*†	90	...	...	7.22
Winnebago*†	93	47	71.3	3.85	Murray†	94	49	73.8	8.39
Indiana.					Oskaloosa†	94	43	73.5	5.56
Angola†	100	48	74.1	4.21	Panama†	98	50	73.8	4.80
Ashboro*†	...	...	50	70.6	Richland*†	...	...	...	58
Butlerville†	...	...	65	77.0	Seymour†	92	49	73.4	7.49
Cambridge City†	94	43	75.5	4.05	Spirit Lake†	93	54	73.2	3.05
Columbia City*†	94	47	72.9	1.89	Storm Lake†	98	50	74.3	2.21
Columbus*†	97	53	74.7	3.60	Tipton†	96	46	74.1	6.53
Connersville†	95	45	76.2	3.79	Vinton†	90	57	72.4	3.86
Degonia Springs*†	96	58	76.9	3.20	Washington	101	48	75.4	3.10
Evansville†	...	...	...	3.11	Webster City*†	96	56	72.3	8.50
Farmland†	98	60	74.1	1.80	Williams*†	96	50	71.3	6.76
Hammond†	97	50	72.8	2.21	Winterset†	100	49	74.1	5.01
Hawpach*†	94	57	73.0	4.85	Kansas.				
Huntington†	...	...	...	3.00	Abilene†	101	52	77.5	3.06
Irrington†	96	52	73.2	3.84	Allison*†	100	52	75.0	4.00
Jeffersonville†	97	54	77.0	3.39	Altamont*†	96	60	78.8	3.52
Lafayette†	96	45	73.9	4.80	Arkaton†	104	48	79.1	1.34
Logansport†	...	...	...	4.16	Atchison†	100	52	76.6	...
Logansport b	95	45	73.2	2.34	Belleville†	101	62	...	6.51
Marion†	101	37	72.8	6.18	Bucklin	...	...	...	0.70
Mauzy	95	44	73.1	3.89	Buffalo Park*	97	56	...	3.87
Mount Vernon a†	...	...	...	2.51	Burr Oak	...	...	...	5.38
Muncie*†	100	60	74.8	...	Cawker City*†	102	60	78.4	3.00
New Albany*†	94	64	76.8	3.71	Collyer*†	106	54	76.6	6.40
Point Isabel†	99	44	74.7	4.39	Columbus†	98	53	76.9	2.53
Princeton*†	99	59	76.2	3.37	Cunningham†	107	50	77.6	1.24
Rockville	96	45	74.5	4.24	Downs	...	...	...	2.96
Rushville†	...	...	...	3.75	Eloc*†	100	54	77.4	5.50
Seymour†	98	52	74.8	2.89	Elk Falls†	...	...	...	2.39
Terre Haute†	...	...	...	3.56	Englewood*†	105	63	81.9	1.69
Valparaiso†	94	53	71.6	2.38	Eureka Ranch†	107	45	76.6	4.51
Evay†	100	52	75.7	1.52	Fort Riley	104	57	77.9	3.45
Vincennes†	...	...	...	4.42	Gibson	108	48	77.4	3.53
Wabash†	...	...	...	6.09	Gove City*†	108	52	76.0	5.86
Worthington†	94	51	76.2	3.14	Grainfield*†	104	54	72.9	4.20
Indian Territory.					Greensburg†	102	47	79.0	0.72
Enfaua†	...	...	...	3.79	Grenola*†	103	57	80.0	2.05
Fort Supply	103	50	79.6	1.55	Grinnell*†	107	59	81.3	2.90
Headton†	100	70	84.8	1.93	Havensville*†	98	57	75.4	5.23
Lehigh†	112	61	83.7	1.08	Hays City†	103	...	...	3.92
Pauls Valley†	110	63	84.8	2.75	Hesston	96	48	74.6	3.63
Purcell†	106	62	82.6	4.54	Horton†	100	52	76.2	4.14
Sapulpa†	103	59†	81.6†	2.54	Hutchinson†	98	52	76.7	3.86
South McAlester†	100	67	81.4	2.00	Independence†	104	57	79.8	3.55
Tulsa†	...	...	...	2.00	Kansas City†	100	51	76.9	3.61
Iowa.					Kellogg	103	51	79.2	2.88
Algonia†	92	56	73.1	3.44	Kiowa†	105	53	80.2	3.13
Alta a†	95	49	71.7	2.76	Kirwin†	...	...	...	4.30
Amana†	93	40	73.1	5.34	La Crosse†	104	55	80.4	2.66
Ames b	95	44	74.3	7.06	Lakin†	109	44	78.0	1.13
Ames c	...	...	...	7.13	Lawrence†	96	...	75.6	6.47
Atlantic†	103	47	73.4	5.52	Lebo†	100	50	76.0	4.07
Bancroft†	102	40	71.8	3.48	McAllaster*†	110	50	73.6	4.47
Belle Plaine†	96	41	73.9	3.98	Macksville*†	102	52	78.9	2.24
Blakeville*†	95	52	74.3	4.85	McPherson†	99	50	76.4	2.86
Blockton†	96	44	74.3	5.14	Manhattan a†	...	...	...	3.90
Bonaparte†	90	47	74.1	4.79	Manhattan b†	106	50	77.3	3.88
Carroll†	95	54	75.7	1.71	Manhattan c†	108	56	76.0	3.75
Cedar Falls†	94	43	72.0	5.67	Marmaton*	98	53	...	2.17
Cedar Rapids†	96	52	75.7	4.45	Medicine Lodge	...	...	...	0.76
Centerville†	96	38	71.3	11.69	Minneapolis†	100	60	76.6	2.45
Charles City†	92	48	72.0	2.77	Monmouth*†	106	52	79.2	3.13
Clarinda†	100	54	76.9	4.87	Morland†	105	47	75.8	4.98
Clinton†	96	47	73.2	4.49	Morse†	95	53	74.2	5.88
College Springs*†	97	52	74.4	3.37	Morton†	101	55	78.7	3.59
Corning b†	94	50	73.3	5.47	Oakley†	109	58	82.8	2.60
Corydon†	93	46	72.9	12.88	Ogallal†	...	...	...	3.92
Creaco†	90	47	69.6	3.10	Ogallal*†	104	60	80.8	1.50
Decorah†	92	51	71.8	2.63	Osawego†	103	53	78.2	1.74
Delaware*†	94	56	71.7	4.99	Page City*†	105	61	80.8	2.50
Denison†	99	50	73.2	3.51	Pauline†	104	52	79.0	6.12
Eagle Grove*†	...	...	...	9.25	Phillipsburg†	106	50	77.0	2.43
Elkader†	96	45	73.4	3.36	Plainville	...	...	...	2.80
Emerson†	102	48	77.8	5.11	Pleasant Dale*†	105	50	75.8	3.00
Fairfield†	92	46	76.9	6.44	Quinter*†	104	56	81.0	5.50
Fayette†	95	49	72.0	2.35	Rome*†	98	55	77.3	2.79
Fort Madison*†	93	55	77.3	4.01	Salina*†	98	61	79.0	2.87
Glenwood†	104	54	79.0	3.92	Sedan†	100	57	78.8	2.00
Grand Meadow*†	91	52	70.0	4.73	Sharon Springs*†	105	58	75.0	1.00
Greenfield†	95	48	72.7	7.18	Shields†	103	41	74.4	3.75
Grinnell†	92	55	74.0	4.44	Sterling†	95	52	75.2	6.52
Grundy Center	92	51	72.2	5.17	Topeka	98	49	73.8	5.82
Hampton†	93	45	69.9	5.68	Tribune†	106†	51†	75.5†	0.65
Hawkeye	...	...	...	3.47	Ulysses†	105	57	78.8	2.45
Hopewille†	92	40	72.5	7.46	Wakefield*†	108	61	80.4	3.54
Hopkinton†	92	48	...	5.29	Wa Keeney*†	102	56	80.9	3.10
Independence†	94	44	73.1	5.63	Wallace a†	...	...	...	2.68
					Wallace b†	106	56	77.4	1.75

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean.			Max.	Min.	Mean.	
Kansas—Cont'd.					Maryland.				
Weskan a ^o	105	58	.....	1.50	Barren Cr'k Sp'gs t ¹	97	51	75.3	3.37
Winona.....	101	53	75.8	4.54	Boettcherville.....	100	50	74.6	1.10
Kentucky.					Cumberland a ^o	97	53	72.9	1.15
Bowling Green t.....	.....	.....	.....	1.19	Cumberland b ^o	101	53	75.6	1.22
Burkesville.....	.....	.....	.....	3.31	Darlington t.....	98	55	74.2	4.53
Canton t ¹	95	63	73.6	3.94	Easton t.....	100	50	76.6	2.65
Carrollton t ¹	98	60	76.3	3.80	Frederick t.....	99	55	73.2	5.20
Cattlettsburg t ¹	96	55	79.4	3.83	Great Falls a ^o	96	55	72.3	4.19
Central City t ¹	100	52	73.4	2.69	Jewell t ¹	95	56	75.0	4.62
Cloverport.....	.....	.....	.....	3.50	Leonardtown t.....	99	54	78.0	4.38
Earlington.....	98	59	78.5	4.42	McDonogh.....	97	54	74.6	2.89
Edmonton t.....	94	56	75.4	2.58	Mt. St. Marys Col t.....	97	54	76.6	5.34
Falmouth t.....	.....	.....	.....	2.73	New Market t ¹	98	56	73.7	3.89
Frankfort t.....	.....	.....	.....	0.85	Solomons t ¹	98	61	77.1	2.49
Franklin t ¹	97	63	76.4	4.34	Taneytown t.....	.....	.....	.....	4.54
Georgetown.....	.....	.....	.....	0.37	Massachusetts.				
Grand Rivers.....	96	55	76.1	4.60	Adams a.....	90	43	68.2	.....
Greensburg t ¹	99	63	77.5	4.02	Adams b.....	.....	.....	.....	5.10
Hopkinsville.....	99	48	75.0	4.10	Amherst.....	92	40	69.8	3.42
Lagrange t.....	99 ^h	53 ^h	76.4 ^h	1.99	Amherst Ex. St'n a ¹	92	40	69.5	3.74
Lancaster.....	.....	.....	.....	1.34	Amherst Ex. St'n b.....	94	42	69.3	1.41
Louisville.....	100	52	76.3	2.53	Andover t.....	94	47	70.5	1.90
Middlesboro t.....	94	58	73.8	1.48	Ashland.....	.....	.....	.....	4.24
Mount Sterling t ¹	95	52	72.8	4.81	Beverly Farms t.....	92	47	67.5	2.88
Munfordville t ¹	99	.....	76.9	2.13	Blue Hill (sum't.).....	92	47	70.3	3.39
Paducah a ^o.....	.....	.....	.....	3.15	Blue Hill (valley).....	95	44	70.1	3.51
Paducah b ^o	96	61	77.8	3.97	Boston.....	.....	.....	.....	2.33
Pellville t.....	98	53	76.2	1.22	Cambridge a.....	96	50	72.6	1.24
Princeton t.....	99	57	76.8	3.36	Cambridge b.....	94	53	72.8	2.53
Richmond.....	98	53	76.4	3.60	Chestnut Hill.....	94	48	72.0	3.35
Robards.....	.....	.....	.....	3.40	Clinton.....	.....	.....	.....	3.40
Russellville t ¹	91	63	75.4	3.96	Concord t.....	95	44	70.5	3.47
Shelby City.....	.....	.....	.....	1.44	Cottuit.....	92	49	69.8	1.18
Shelbyville t ¹	99	50	75.1	4.81	Dudley t.....	95	43	72.1	3.84
South Fork t ¹.....	.....	.....	.....	2.08	Egg Rock, Nahant.....	89	52	68.3	.....
Springfield.....	95	47	73.0	2.95	Fall River a ¹	93	54	72.4	3.75
Versailles.....	.....	.....	.....	1.33	Fiskdale.....	.....	.....	.....	5.97
Wickliffe t ¹	95	66	77.8	1.69	Fitchburg a ¹	92	56	71.0	3.94
Williamsburg a ^o.....	.....	.....	.....	3.18	Fitchburg b.....	95	47	71.0	3.08
Louisiana.					Florida b.....	87	41	66.3	3.93
Abbeville.....	97	68	81.0	12.74	Frammingham.....	96	45	71.0	4.22
Alexandria t.....	98	64	80.8	13.40	Gilbertville.....	94	42	69.7	7.15
Amite t.....	97	68	80.4	8.86	Groton.....	94	48	72.0	2.64
Baton Rouge t.....	99	70	79.3	7.92	Heath a ^o	94	46	72.1	.....
Cameron t.....	96	62	78.4	14.80	Hyannis t ¹	98	54	74.5	1.24
Cheneyville t.....	95	60	81.0	11.53	Kendall Green.....	92	50	72.5	3.92
Clinton.....	98	68	81.7	7.48	Lake Cochituate.....	97	49	71.5	3.47
Coushatta a ^o.....	.....	.....	.....	3.01	Lawrence.....	102	50	74.0	1.22
Coushatta b ^o	98	62	81.3	3.93	Leicester.....	92	45	70.4	4.63
Davis.....	97	60	79.3	5.73	Leominster.....	.....	.....	.....	2.93
Delhi t.....	.....	.....	.....	9.31	Long Plain a ^o	92	52	72.4	2.03
Donaldsonville t.....	99	62	78.8	4.27	Lowell a.....	94	50	72.1	2.32
Emilie.....	94	60	80.3	11.43	Lowell b.....	94	46	71.4	.....
Franklin t.....	93	70	80.7	13.88	Ludlow.....	97	41	72.0	.....
Girard t.....	.....	.....	.....	1.75	Lynn.....	94	59	67.2	5.92
Grand Coteau.....	92	69	79.0	8.99	Mansfield t ¹	99	56	73.0	3.13
Hammond.....	.....	.....	.....	6.64	Medford.....	.....	.....	.....	1.59
Homer t.....	93	65	79.2	4.06	Middleboro.....	93	44	69.3	1.55
Houma t.....	95	61	79.3	19.71	Milton t ¹	93	51	69.1	1.78
Jeanerette.....	90	62	80.1	23.08	Monroe.....	94	52	65.7	6.14
Lafayette t.....	96	68	79.1	13.13	Monson.....	93	45	70.4	5.26
Lake Charles t.....	97	66	75.5	14.20	Mount Nonotuck.....	.....	.....	.....	3.80
Lawrence t.....	92	68	81.1	12.33	Mystic Lake.....	.....	.....	.....	2.54
Liberty Hill.....	100	62	80.5	9.47	Mystic Station.....	91	50	68.4	3.53
Luling.....	94	65	79.1	7.83	New Bedford a ¹	90	51	69.0	1.75
Marksville t.....	96	67	79.8	6.30	New Bedford b.....	92	45	70.5	3.68
Manropas.....	92	68	78.4	11.06	Newburyport a.....	95	46	.....	1.37
Melville t.....	95	71	83.4	7.51	Newburyport b.....	.....	.....	.....	1.70
Minden t.....	98	56	81.2	6.47	Northampton.....	95	50	73.4	4.61
Monroe t.....	94	66	80.8	8.41	North Billerica.....	100	47	74.1	1.00
Natchitoches t.....	96	61	79.2	8.03	Plymouth t ¹	94	56	72.2	1.81
N. La. Ex. Station.....	96	63	79.7	4.92	Princeton.....	92	43	69.2	2.40
Opelousas t.....	94	68	80.8	13.14	Provincetown.....	95	52	71.5	1.30
Paincourtville.....	93	69	79.8	6.57	Randolph.....	.....	.....	.....	2.40
Plain Dealing.....	97	64	80.4	2.99	Roberts Dam.....	.....	.....	.....	2.16
Plaquemine.....	94	73	81.5	8.21	Roxbury.....	93	50	70.3	3.56
Rayne t.....	93	69	80.6	13.53	Royalston t ¹	91	58	71.1	4.50
Roseland.....	94	68	79.6	11.29	Salem b.....	.....	.....	.....	3.03
Schriever t.....	101	62	81.2	15.37	Somerset t.....	102	54	73.0	3.51
Shell Beach.....	92	68	80.6	14.14	South Hingham.....	.....	.....	.....	1.70
Sugar Ex. Station t.....	96	70	82.2	10.03	Springfield Arm'y.....	95	51	73.2	7.17
Thibodeaux.....	.....	.....	.....	8.92	Taunton a ¹	99	49	71.3	1.61
Wallace.....	100	68	81.3	9.51	Taunton b.....	97	48	70.5	1.69
West End.....	.....	.....	.....	6.23	Taunton c.....	96	44	69.6	1.72
Winnboro.....	98	63	79.2	9.20	Taunton d ¹	102	45	71.1	1.38
Maine.					Turners Falls.....	93	48	70.6	4.58
Bar Harbor.....	89	46	.....	1.01	Wakefield.....	94	46	71.9	1.54
Belfast a ^o	87	58	69.9	1.63	Waltham.....	.....	.....	.....	2.69
Bethel.....	89	58	65.4	2.71	Webster.....	.....	.....	.....	2.52
Calais.....	87	46	67.4	3.07	Wellesley.....	94	48	69.7	3.35
Cornish t ¹	91	53	69.6	3.64	Westboro t.....	97	44	72.2	2.64
East Machias t.....	88	40	64.7	1.63	Williamstown t.....	92	43	68.8	4.22
Fairfield.....	92	44	69.6	1.78	Winchester.....	.....	.....	.....	2.44
Farmington t.....	98	39	69.4	3.29	Worcester.....	95	49	72.5	4.70
Houlton t.....	91	40	66.8	3.78	Michigan.				
Kennebec Arsenal.....	92	44	70.0	2.06	Adrian.....	99	43	71.9	4.86
Kents Hill.....	90	44	68.0	2.48	Albion t.....	94	47	72.6	2.41
Lewiston.....	90	46	69.9	3.18	Allegan.....	96	43	71.1	3.21
Mayfield.....	89	45	68.0	2.73	Alma.....	95	40	69.6	2.79
Orono t.....	90	46	68.6	1.99	Ann Arbor.....	94	41	70.6	2.21
Sorrento.....	87	44	65.6	1.01	Arbela.....	89	53	70.3	2.80
West Jonesport t ¹	90	48	67.7	.....	Ball Mountain.....	94	45	69.3	2.06

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean.			Max.	Min.	Mean.	
Michigan—Cont'd.					Mississippi—Cont'd.				
Bear Lake.....	92	40	68.4	2.90	Canton t.....	92	68	79.0	11.53
Bellaire.....	98	34	65.6	0.58	Cleveland t.....	93 ^h	70 ^h	81.0 ^h	8.50 ^h
Benton Harbor.....	94	45	71.0	2.94	Columbus a t.....	.....	.....	.....	14.49
Bensonia.....	91	43	66.5	2.81	Columbus b t.....	103	66	81.5	15.83
Berlin t ¹	101	44	67.9	3.55	Corinth t.....	90	62	78.2	8.62
Birch Run.....	94	42	69.8	3.49	Crystal Springs t.....	97	67	80.3	12.99
Birmingham.....	96	45	71.0	0.16	Duck Hill t.....	94	68	80.0	7.95
Bronson.....	96	43	71.8	3.76	Edwards t.....	95	67	81.8	12.11
Brown City.....	95	45	70.7	2.72	Enterprise t.....	93	68	78.6	7.75
Caldwell.....	94	38	68.4	1.95	Fayetteville.....	92	68	79.8	8.44
Calumet.....	94	45	67.1	1.96	Greenville.....	93	69	80.4	9.25
Charlevoix.....	94	47	69.4	2.10	Hattiesburg t ¹	96	74	81.2	9.04
Clinton.....	97	46	71.8	2.37	Hazlehurst t.....	94	63	77.6	7.15
Concord.....	95	41	70.8	2.74	Hernando t.....	97	64	79.9	8.16
Crystal Falls.....	90	45	66.4	4.09	Holly Springs t.....	96	62	77.9	7.63
Evart t ¹	97	35	67.4	1.10	Jackson t ¹	96	64	79.8	6.65
Fairview.....	95	46	68.2	2.46	Kosciusko t.....	92	65	77.4	7.50
Fitchburg.....	96	39	70.1	2.64	Lake t.....	90	64	79.7	1.50
Flint.....	97	39	69.6	2.30	Louisville t.....	94	58	73.0	10.69
Freemont.....	94	42	70.9	1.97	Macon t.....	98	66	81.5	23.57
Gaylord.....	94	39	67.1	1.38	Moss Point t.....	94	68	80.6	7.12
Gladwin.....	99	38	69.8	1.60	Natchez t.....	94	68	80.9	7.12
Glenwood.....	89	50	71.6	1.63	Okolona t.....	96	62	79.4	12.27
Grand Rapids t.....	95	45	72.8	2.89	Palo Alto t.....	94	61	78.2	9.38
Grape.....	95	48	72.6	2.88	Pontotoc t.....	94	61	77.7	9.30
Grayling.....	95	38	67.7	2.97	Port Gibson t.....	96	64	80.0	9.09
Hanover.....	94	46	70.8	2.76	Ship Island t.....	95 ^h	74 ^h	83.5 ^h	11.49
Harbor Springs.....	94	41	67.2	3.30	Vaiden t.....	100	65	80.8	7.75
Harrison t.....	92	40	67.4	1.13	Water Valley t ¹	100	68	79.7	5.45
Harriaville.....	89	45	65.6	2.51	Waynesboro a t.....	94	60	77.6	7.68
Hart.....	85	32	63.5	1.80	Waynesboro b t.....	94	62	80.8	.....
Highland Station.....	97	41	70.2	2.28	Yazoo City t.....	.....	.....	.....	7.55
Hillsdale t ¹	95	54	73.0	4.37	Missouri.				
Howell.....	98	39	69.3	2.52	Adrian t.....	96	45	70.4	4.30
Ivan.....	98	42	69.3	1.82	Alton t.....	96	70	79.8	4.86
Jeddo.....	94	44	68.2	2.26	Appleton City t.....	97	48	76.8	4.52
Kalamazoo.....	94	54	72.6	1.80	Augusta.....	.....	.....	.....	4.00
Lake City t ¹	89	53	71.6	1.54	Bethany.....	95	51	76.8	5.30
Lansing t.....	95	45	71.0	3.08	Big Piney.....	.....	.....	.....	6.94
Lathrop.....	.....	.....	.....	3.95	Brunswick.....	94	50	75.2	5.00
McMillan.....	87	34	64.1	2.28	Canton.....	.....	.....	.....	4.68
Madison.....	96	46	71.1	4.70	Cape Girardeau t.....	.....	.....	.....	2.10
Marshall t.....	97	43	71.4	2.80	Carrollton t.....	94	57	75.9	5.71
May.....	94	45	71.1	2.42	Chillicothe.....	100	55	77.6	7.49
Montague.....	86	44	66.7	2.48	Clinton t ¹	91	60	73.9	4.22
Mottville.....	96	42	71.8	4.44	Conception t.....	98	50	77.0	2.78
Noble.....	86	54	73.6	5.17	Concordia.....	.....	.....	.....	4.55
North Marshall.....	93	40	67.8	2.15	Darksaville t.....	98	52	75.6	4.84
Ovid.....	95	43	70.9	2.29	Dunnegan.....	.....	.....	.....	5.05
Parkville.....	.....	.....	.....	2.35	East Lynne t ¹	95	54	76.8	5.99
Rawsonville.....	96	48	72.3	1.89	Edge Hill.....	95	65	78.6	6.99
Rockland t.....	95	41	69.8	3.80	Edina.....	.....	.....	.....	6.33
Saint Ignace.....	84	44	65.4	3.61	Eldon t ¹	98	52	73.8	5.92
Sand Beach.....	96	35	65.7	1.72	Excelsior Springs t ¹	94	45	73.7	8.78
Standish.....	97	45	68.8	2.08	Fayette.....	98	50	76.6	4.85
Thornville.....	96	47	73.4	2.84	Fox Creek t ¹	92	64	75.2	4.17
Vandalia.....	93	46	71.0	2.54	Fulton.....	.....	.....	.....	7.20
Vienna.....	.....	.....	.....	3.25	Gainesville.....	.....	.....	.....	5.94
Washington.....	98	41	70.4	2.29	Galt.....	.....	.....	.....	5.50
Weldon Creek.....	.....	.....	.....	1.97	Glasgow t.....	94	56	74.6	5.84
Williamstown t.....	94	52	71.5	2.30	Glenest t.....	102	.....	.....	5.54
Ypsilanti.....	97	45	70.6	2.06	Gordonville t ¹	92	54	76.0	3.87
Minnesota.					Gorin.....	.....	.....	.....	7.35
Albert Lea t ¹	93 ^d	49 ^d	59.6	6.24	Harrisonville t.....	94	53	75.0	4.48
Alexandria t.....	.....	.....	.....	3.76	Harvill.....	.....	.....	.....	4.34
Alma City t ¹	89 ^d	48 ^d	60.4	3.49	Hermann t ¹	93	60	76.8	4.22
Ash Creek t.....	95	44	69.6	1.25	Houston.....	94	64	78.6	3.34
Bingham Lake t.....	95	46	70.2	2.20	Independence.....	.....	.....	.....	6.03
Bird Island.....	90	45	68.6	5.72	Irena.....	.....	.....	.....	6.03
Caledonia t.....	90	47	69.6	2.14	Ironton.....	.....	.....	.....	5.30
Cambridge t.....	93	42	69.6	3.97	Jefferson City t.....	98	57	77.7	6.12
Camden t.....	95	48	70.5	4.95	Jerome t.....	.....	.....	.....	3.31
Canton t.....	97	47	70.3	2.55	Lamar t.....	94	55	77.0	3.84
Clear Lake t ¹	87 ^d	54 ^d	70.6	.....	Lamonte t.....	.....	.....	.....	6.07
Crookston t.....	95	43	70.8	2.92	Langdon t.....	101	51	75.6	2.78
Easton t.....	98	47	71.9	3.13	Lebanon.....	92	48	72.8	5.58
Farmington t.....	96	46	70.7	9.21	Lexington t.....	94	51	75.0	6.79
Fergus Falls t ¹	89	57	71.2	4.62	Liberty.....	99	46	70.5	4.74
Fort Ripley t.....	.....	.....	.....	4.61	Linnua t ¹	95	55	77.4	7.41
Grand Meadow t ¹	96	50	70.6	3.50	Louisiana Bridge t.....	.....	.....	.....	4.41
Granite Falls.....	95	53	72.2	5.27	McClunes Station t.....	96	48	78.8	3.10
Kimbria t.....	102	45	71.7	3.70	Mansfield.....	.....	.....	.....	3.75
L Winnibigoshish.....	88	55	67.0	1.79	Marble Hill.....	80	63	76.8	5.42
Leech Lake t.....	91 ^d	41	68.2	3.26	Marshall t.....	99	54	75.9	4.98
Long Prairie t ¹.....	.....	45	63.8	.....	Mexico t.....	95	49	75.3	9.05
Maple Plain t ¹	92	50	70.8	8.68	Mine La Motte.....	91	51	75.4	2.89
Minneapolis t.....	90	49	70.8	12.01	Mount Vernon.....	.....	.....	.....	5.60
Montevideo t.....	89	48	69.9	4.26	Neosho.....	96	52	77.2	5.45
Morris t.....	93	52	72.0	3.51	New Boston.....	94	46	71.0	4.74
Northfield t.....	89	49	70.2	9.82	New Haven t.....	98	54	76.6	4.50
Ortonville t.....	.....	.....	.....	3.94	New Palestine.....	.....	.....	.....	5.51
Pine River t ¹	87	56	70.1	3.42	Oakfield.....	96	52	75.4	3.87
Princeton t.....	94	47 ^d	70.4	4.87	Oak Ridge t ¹	94	59	74.2	4.20
Redwood Falls t.....	.....	.....	.....	6.37	Olden.....	94	52	75.2	6.52
Rolling Green t.....	90	48	69.9	3.99	Oregon a.....	97	53	76.4	2.86
Saint Charles t.....	90	48	68.8	3.60	Oregon b t ¹	98	50	75.6	2.51
Saint Olof t ¹	92	48	70.1	6.35 ^t	Oto.....	.....	.....	.....	4.59
Sheldon t.....	.....	.....	.....	1.29	Phillipsburg t ¹	94	.....	73.5	5.25
Wabasha t.....	.....	.....	.....	71.7	Pickering t.....	101	53	76.3	2.06
Mississippi.					Platte River t ¹	99	58	74.6	3.86
Aberdeen t.....	96	61	78.2	7.51	Poplar Bluff.....	94	52	76.0	3.88
Agricultural College.....	94	67	79.3	13.39	Princeton t.....	100	46	76.0	5.53
Batesville t.....	94	64	78.7	5.25	Rea t ¹	97	60	75.5	3.52
Booneville t.....	95 ^d	70 ^d	82.0 ^d	14.03	Saint Joseph t.....	.....	.....	.....	4.67
Brookhaven t.....	97	64	79.2	15.63	Saint Louis a.....	94	50	74.7	3.34

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
<i>Missouri—Cont'd.</i>	°	°	°	Ins.	<i>Nevada—Cont'd.</i>	°	°	°	Ins.
Saint Louis b.....	97	53	75.3	4.03	Hawthorne b.....	98	50	72.7	T.
Sedalia.....	98	54	76.5	8.23	Hot Springs *1.....	98	63	80.2	T.
Shelbina.....	95	56	75.5	4.60	Humboldt *1.....	94	55	74.3	0.22
Stannett *1.....	95	56	77.8	3.84	Lewers Ranch.....	99	42	65.4	0.03
Stellada *1.....	95	50	75.0	4.58	Lovelock *1.....	98	64	78.9	0.00
Strother.....	95	50	75.0	7.89	McDermitt.....	98	64	78.9	0.12
Vandeville.....	95	50	75.0	6.25	Mill City *1.....	102	65	77.0	T.
Vermont *1.....	94	61	74.3	6.87	Monitors Ranch.....	96	33	65.8	0.67
Warrensburg *1.....	94	60	75.7	5.22	Palisade *1.....	98	50	74.1	0.00
Warrenton.....	97	52	75.5	5.75	Palmetto.....	90	34	64.7	T.
Wheatland.....	97	52	75.5	4.09	Pioche.....	100	50	71.1	0.17
Whiteside *1.....	87	58	70.8	4.75	Reno *1.....	94	55	75.3	0.00
Withers Mills.....	97	58	70.8	4.20	Reno State Univ *1.....	93	38	71.0	T.
Zeitonia.....	97	58	70.8	8.02	Saint Clair.....	92	51	72.6	0.00
<i>Montana.</i>					South Camp *1.....	88	43	66.4	T.
Camp Poplar River.....	102	38	68.5	3.09	Stoel.....	100	32	61.6	0.00
Fort Keogh.....	107	42	74.5	0.53	Sunnyside.....	100	30	64.5	0.05
Fort Missoula.....	94	35	63.2	0.55	Tecoma *1.....	95	58	75.8	0.32
<i>Nebraska.</i>					Toano *1.....	96	60	75.2	0.00
Agee *1.....	90	59	75.8	0.25	Tybo.....	93	45	68.8	0.20
Albion.....	100	46	75.3	1.36	Verdi *1.....	96	48	65.6	0.00
Anselmy *1.....	105	41	74.3	3.03	Wabaska *1.....	100	64	79.3	T.
Arberville *1.....	104	50	73.8	3.64	Wadsworth *1.....	100	58	76.0	T.
Ashland *1.....	100	57	77.4	3.77	Wells *1.....	96	50	71.2	1.57
Auburn *1.....	102	54	77.8	3.55	Winnemucca *1.....	94	51	73.1	0.00
Bassett *1.....	97	53	74.4	0.76	<i>New Hampshire.</i>				
Beatrice *1.....	101	50	75.0	3.40	Antrim.....				3.26
Brandon.....	98	60	80.1	3.75	Belmont.....				3.48
Burwell *1.....	98	60	80.1	3.75	Berlin Mills.....	90	35	65.0	3.49
Cornelia.....	102	42	72.6	2.50	Brookline.....	91	46	69.5	2.05
Creighton *1.....	103	42	72.6	0.26	Concord *1.....	91	46	69.5	2.50
Cretel.....	102	50	74.6	4.60	East Canterbury.....	92	51	72.4	1.95
Culbertson *1.....	98	55	71.2	3.90	Grafton.....	91	40	69.0	1.88
David City *1.....	98	55	71.2	3.90	Groveton *1.....	89	48	65.0	4.27
De Soto *1.....	101	54	76.1	3.24	Hanover *1.....	88	45	67.4	1.93
Dunning *1.....	99	48	74.4	0.01	Lakeport.....	89	37	64.6	2.70
Ericon *1.....	101	57	74.0	2.74	Littleton *1.....	89	37	64.6	4.57
Fairbury *1.....	101	57	74.0	4.92	Manchester *1.....	92	51	70.1	1.78
Falls City *1.....	100	62	76.0	2.60	Mine Falls.....	92	51	70.1	1.97
Fort Robinson.....	98	45	71.7	1.64	Nashua.....	95	47	71.9	2.29
Fort Sidney.....	103	41	71.5	1.46	Newton.....	94	43	69.8	2.11
Franklin.....	102	48	75.7	4.07	North Conway.....	93	39	67.6	1.54
Fremont *1.....	100	53	74.8	3.39	Pennichuck Station.....	93	36	68.0	3.01
Geneva.....	99	55	74.0	2.80	Peterboro.....	93	36	68.0	1.66
Genoa *1.....	99	55	74.0	2.80	Plymouth *1.....	96	39	66.5	3.40
Gering *1.....	98	47	72.7	1.22	Sanborn.....	89	41	67.4	3.40
Haigler *1.....	104	46	72.2	4.92	Stratford.....	97	36	69.6	5.40
Hartington *1.....	101	41	74.2	0.78	Walpole.....	90	43	68.5	1.95
Harvard *1.....	104	50	76.4	2.25	West Milan.....	90	34	64.4	3.66
Hayes Center *1.....	101	52	73.5	2.17	Wier Bridge.....	90	34	64.4	2.16
Holdrege *1.....	101	52	73.5	2.17	Wolfboro.....	90	34	64.4	2.46
Imperial *1.....	105	52	74.0	3.00	<i>New Jersey.</i>				
Kennedy *1.....	95	51	72.7	1.96	Allaire.....	96	44	71.4	3.67
Kimball *1.....	100	45	71.8	0.91	Asbury Park.....	88	55	73.1	3.67
Lexington *1.....	112	40	72.2	3.61	Bayonne.....	101	54	75.0	3.39
Lincoln *1.....	102	52	76.1	5.38	Belleville.....	100	47	72.0	3.79
Marquette *1.....	102	53	76.1	5.38	Belvidere.....	100	47	72.0	3.09
Minden *1.....	103	46	74.6	3.43	Beverly *1.....	100	51	74.2	4.27
Mullen *1.....	112	48	76.8	1.62	Bivalve.....	100	47	72.0	4.27
Nebraska City *1.....	100	62	79.4	5.59	Blairtown.....	100	46	74.0	3.61
Nesbit.....	97	48	74.6	1.44	Bridgeton.....	100	57	77.0	3.48
Norfolk *1.....	97	48	74.6	1.44	Bridgeton b.....	104	52	77.0	2.95
Norfolk *1.....	103	45	75.6	2.48	Camden.....	105	54	77.2	6.61
Oakdale *1.....	102	46	73.2	0.58	Cape May *1.....	93	51	72.3	4.77
O'Neill *1.....	102	53	72.9	0.58	Deckertown.....	95	45	72.8	4.71
Oreana *1.....	97	58	77.3	5.75	Dover.....	97	44	71.0	2.90
Ough *1.....	97	58	77.3	5.75	Egg Harbor City *1.....	100	50	72.6	5.42
Palmer *1.....	104	54	77.4	2.25	Elizabeth *1.....	97	33	74.6	2.43
Plattsmouth *1.....	104	54	77.4	2.25	Franklinville.....	100	44	73.8	7.96
Precept *1.....	102	54	75.3	3.82	Freehold.....	95	52	73.5	2.95
Ravenna.....	101	46	73.1	1.64	Gillette.....	100	46	73.5	2.50
Savannah.....	106	50	74.9	2.50	Hammon.....	96	47	71.9	7.35
Springview.....	107	50	74.6	1.57	Hanover.....	96	47	71.9	2.38
Stanton.....	103	50	77.5	3.99	Highland Park *1.....	99	52	74.6	3.10
Superior *1.....	103	50	77.5	3.99	Imlaystown.....	100	52	75.8	4.10
Syracuse *1.....	102	52	77.8	3.99	Junction.....	99	51	74.6	3.75
Tecumseh *1.....	102	52	77.8	3.99	Lambertville.....	99	51	74.6	3.20
Thedford *1.....	113	68	81.1	1.61	Locktown.....	99	51	74.2	3.20
Turlington *1.....	100	59	80.4	4.62	Moorestown *1.....	101	52	74.1	6.48
Wallace *1.....	100	50	74.1	1.49	Mount Holly.....	98	51	75.0	3.41
Weeping Water *1.....	105	51	73.6	4.48	Newark *1.....	98	52	73.8	3.41
West Point *1.....	102	45	74.3	2.78	Newark b.....	99	57	75.6	2.89
Whitman *1.....	98	50	74.2	4.50	New Brunswick *1.....	105	51	76.5	3.13
Wilcox a.....	104	56	78.3	3.52	New Brunswick b.....	97	54	74.0	3.23
Wilcox b.....	104	56	78.3	3.52	Newton *1.....	97	45	72.0	3.21
York *1.....	104	56	78.3	3.52	Ocean City *1.....	95	55	71.2	3.18
<i>Nebraska.</i>					Oceanic.....	96	57	76.8	4.00
Austin.....	89	42	67.2	0.07	Paterson.....	98	52	74.3	3.88
Battle Mountain *1.....	98	60	74.0	0.00	Plainfield.....	105	49	75.8	3.87
Belleville *1.....	115	57	69.0	0.20	Randocas *1.....	101	56	72.0	4.33
Belmont.....	89	41	67.2	0.00	Redington *1.....	96	60	77.5	4.75
Beowawe *1.....	99	63	78.1	0.00	River Vale *1.....	98	62	75.4	4.98
Browns *1.....	100	70	84.1	0.00	Salem.....	98	62	75.4	4.98
Carlin *1.....	100	70	84.1	0.00	Somerville.....	104	49	76.2	5.44
Carson City *1.....	92	37	68.9	0.08	South Orange *1.....	98	50	72.5	2.73
Crane Ranch.....	92	37	68.9	0.08	Tenafly.....	97	47	70.6	3.82
Downeyville.....	104	52	78.0	0.00	Toms River.....	98	62	78.1	5.33
Elko *1.....	98	50	65.5	0.00	Trenton *1.....	99	64	80.0	7.11
Elko, near.....	102	50	68.4	0.00	Vineland.....	99	52	75.1	5.54
Ely.....	94	33	62.1	0.13	West Summit.....	95	48	71.0	3.81
Eureka.....	108	50	73.7	0.02	Whiting.....	102	50	74.4	3.81
Fenelon *1.....	108	50	73.7	0.02	Woodbine.....	97	47	73.1	5.10
Golconda *1.....	102	48	66.2	0.25	<i>New Mexico.</i>				
Halleck *1.....	102	48	66.2	0.25	Albany.....	101	57	78.9	0.85
Hawthorne *1.....	97	63	79.6	T.	Albuquerque *1.....	96	52	78.3	1.45

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
<i>New Mexico—Con.</i>	°	°	°	<i>Ins.</i>	<i>New York—Cont'd.</i>	°	°	°	<i>Ins.</i>
Bloomfield.....	102	43	76.8	0.88	West Point.....	99	40	72.8	5.97
Chama *1.....	93	39	68.6	3.92	White Plains *1.....	86	58	67.9	.....
Coolidge *1.....	105	30	67.4	0.20	Willels Point.....	98	54	73.0	3.49
Deming *1.....	108	30	70.6	0.20	<i>North Carolina.</i>				
Dulce *1.....	96	34	66.4	1.94	Asheville *1.....	89	53	69.2	4.93
East Las Vegas *1.....	93	38	69.7	2.26	Bakersville *1.....	92	49	71.3	6.01
Embudo.....	105	53	78.3	0.84	Boone *1.....	88	60	71.4	2.62
Estalina Springs *1.....	95	44	69.2	2.43	Bryson City *1.....	103	52	76.9	3.72
Folsom *1.....	94	45	70.0	2.30	Chapel Hill *1.....	82	50	67.4	4.72
Fort Bayard.....	102	53	76.1	2.27	Columbus.....	97	55	76.5	7.05
Fort Wingate.....	93	38	70.4	2.09	Concord.....	101	58	77.4	2.40
Gallinas Spring *1.....	101	47	74.9	2.00	Douglas.....	98	55	77.4	10.32
Halls Peak *1.....	92	30	62.6	2.78	Fayetteville *1.....	98	55	77.9	5.05
Hillsboro *1.....	99	57	77.4	1.62	Greensboro *1.....	92	56	76.0	3.64
La Luz *1.....	93	65	78.8	1.23	Horse Cove *1.....	88	52	70.2	9.33
Las Cruces *1.....	104	41	76.8	1.33	Lenoir *1.....	90	58	73.9	4.90
Lordsburg *1.....	107	78	88.0	0.05	Lexington *1.....	98	54	70.3	4.49
Los Lunas *1.....	105	46	78.3	0.30	Lillington *1.....	98	54	70.3	4.15
Monero *1.....	93	36	65.8	2.67	Littleton *1.....	100	51	76.5	6.45
Olio *1.....	101	48	75.7	0.84	Louisburg *1.....	94	53	75.7	2.62
Red Canyon *1.....	100	44	74.6	1.59	Lumberton *1.....	100	50	79.3	5.22
Socorro *1.....	102	60	80.5	1.09	Marion.....	94	52	74.0	3.52
Springer *1.....	95	48	71.6	2.95	Morganton *1.....	94	57	74.9	5.12
Taos *1.....	97	46	70.2	1.60	Mount Airy *1.....	94	48	75.3	4.67
<i>New York.</i>					Mount Holly *1.....	96	54	75.6	5.13
Addison.....	94	43	68.3	4.94	Mount Pleasant *1.....	96	54	75.6	5.13
Alfred Center.....	91	41	67.2	2.14	Murphy *1.....	96	56	77.2	7.52
Angelica *1.....	88	39	64.8 ^a	2.55	Newbern *1.....	96	56	77.2	7.52
Arcade *1.....	88	39	67.2	4.59	Oak Ridge *1.....	96	53	75.1	4.94
Attica.....	91	43	67.2	3.77	Pittsboro.....	95	50	70.1	4.30
Au Sable Forks.....	91	43	67.2	7.46	Salisbury.....	96	60	79.0	4.72
Avon.....	91	43	67.2	2.53	Saxon *1.....	99	48	75.8	4.48
Baldwinsville *1.....	99	50	70.5	4.64	Smithfield.....	98	53	76.6	3.37
Bethlehem Center.....	91	43	67.2	4.06	Soapstone M't *1.....	97	49	75.7	2.72
Binghamton *1.....	94	40	68.5	2.92	Southern Pines *1.....	103	50	77.2	10.83
Boyd's Corners *1.....	94	40	74.2	5.05	Tarboro.....	102	50	78.2	4.66
Brentwood.....	94	48	71.7	4.35	Wadeville *1.....	94	57	74.8	4.66
Brookfield.....	91	38	66.7	7.36	Washington *1.....	101	44	79.8	3.69
Canaseraga *1.....	91	39	66.2	3.61	Weldon *1.....	98	52	76.2	7.16
Canton *1.....	93	43	67.5	3.98	Willetton.....	97	53	75.3	6.63
Carmel.....	92	45	72.0	6.46	<i>North Dakota.</i>				
Cherry Creek.....	91	43	67.2	3.27	Ashley *1.....	89	58	66.6	3.63
Conestableville *1.....	91	43	64.0 ^f	5.45	Bottineau *1.....	95	49	67.4	3.64
Cooperstown *1.....	90	42	66.6	7.80	Churchs Ferry *1.....	88	40	66.6	4.87
Corning.....	91	43	67.2	4.27	Dawson *1.....	88	35	66.4	5.23
Cortland.....	89	43	66.7	6.44	Dickinson *1.....	93	58	66.6	3.37
De Kalb Junction.....	91	43	67.2	5.40	Ellendale *1 ^g	92	50	74.6	2.16
Dempster.....	91	43	67.2	5.41	Fargo *1.....	87 ^g	40	68.9	5.02
Deposit.....	91	43	67.2	3.87	Fort Stevenson *1.....	95	41	69.2	2.64
Dunkirk b.....	91	43	67.2	3.20	Fort Yates.....	92	45	69.8	2.40
Easton.....	91	43	67.2	4.34	Gallatin *1 ^h	98	40	64.8	4.45
Eden Center.....	89	44	71.8	4.13	Grafton *1.....	88	39	66.9	1.69
Elmira *1.....	90	53	75.5	3.39	Grand Forks *1.....	96	44	69.2	2.65
Factoryville *1.....	97	39	71.1	3.60	Grand Rapids *1.....	92	39	68.0	3.68
Fleming.....	92	46	69.6	3.30	Hope *1.....	90 ^d	43 ^d	66.84	3.32
Fort Niagara.....	94	49	72.6	2.10	Kelso *1.....	95	42	67.2	5.21
Galway.....	91	43	67.2	2.38	Lakota *1.....	108	34	73.6	1.38
Geneva *1.....	97	45	70.3	2.27	Milott *1.....	95	40	68.2	2.29
Gloversville *1.....	93	40	67.9	3.27	Minto *1.....	92	41	68.0	3.13
Hammondsport.....	98	45	72.3	2.96	Napoleon *1.....	91	40	68.1	1.79
Hess Road Stat *1.....	92	43	69.1	8.44	Power *1.....	95	46	70.0	4.28
Honeyamead Brook *1.....	92	45	69.7	4.13	Saint John *1.....	84	45	66.0	2.22
Humphrey *1.....	90	39	68.1	4.88	Seymour *1.....	92	42	68.8	2.26
Ithaca *1.....	95	46	71.2	4.93	White City *1.....	90	44	69.6	4.71
Jamestown *1.....	91	50	70.8	.....	White Earth *1.....	97	34	66.5	1.36
Kings Station.....	91	43	67.2	4.31	Will Rice *1 ⁱ	89	38	66.5	7.40
Lebanon Springs.....	93	39	68.0	4.98	Willow City *1.....	89	38	66.5	3.63
Le Roy.....	91	47	70.2	3.40	Woodbridge *1.....	100	31	68.0	3.96
Liberty.....	91	43	67.2	1.98	Yule *1.....	100	34	69.9	2.73
Little Valley.....	91	43	67.2	3.18	<i>Ohio.</i>				
Lowville *1.....	91	43	67.2	4.94	Akron *1.....	95	48	71.4	7.08
Lyndonville.....	92	43	67.2	3.07	Ashland.....	94	51	72.0	3.46
McLean.....	91	43	67.2	6.89	Athens *1.....	98	49	72.7	3.36
Madison Barracks.....	91	43	67.2	4.52	Bangorville *1.....	95	47	70.6	4.45
Malone *1.....	85	40	67.5	7.69	Bellevue *1.....	98	46	70.5	2.30
Marshland *1.....	94	57	64.7	5.47	Caledonia *1.....	91	43	67.2	3.39
Middletown.....	97	52	73.1	4.05	Canton *1.....	96	46	72.1	6.63
Minnewaska *1.....	88	47	68.0	6.24	Carrollton.....	96	44	70.7	7.06
Mount Morris.....	94	39	67.7	2.05	Celina *1.....	95	48	74.1	7.10
Newark Valley.....	91	43	67.2	4.24	Circleville *1.....	91	43	67.2	2.43
New Lisbon *1.....	90	39	64.7	6.23	Clarksburg *1.....	96	47	74.1	1.99
N'th Hammond *1.....	92	48	67.5	4.21	Cleveland *1.....	94	50	70.3	4.78
Number Four *1.....	88	39	68.1	5.91	Dayton *1.....	100	49	77.1	1.36
Oxford.....	88	42	66.1	5.62	Demos *1.....	93	50	72.7	3.25
Palermo *1.....	95	45	68.9	5.60	Ellsworth.....	91	43	67.2	5.43
Perry City *1.....	94	40	66.2	6.86	Elyria.....	99	50	74.0	3.93
Plattsburg B'ks.....	91	44	68.8	5.21	Findlay *1.....	97	44	73.1	3.91
Port Jervis.....	94	47	70.7	7.08	Fostoria *1.....	92	48	73.7	3.14
Poughkeepsie.....	98	44	71.5	4.19	Garrettsville *1.....	95	43	69.5	3.20
Quaker Street.....	93	41	66.8	5.01	Georgetown *1.....	100	55	76.1	6.78
Rome.....	98	44	70.3	4.62	Gratiot.....	93	50	72.3	4.49
Romulus.....	95	46	71.0	2.83	Greenfield.....	96	49	71.6	2.89
Rondout *1.....	95	47	68.0	3.90	Greenville *1.....	91	46	72.6	5.22
Schockad Depot.....	91	43	67.2	5.92	Hanging Rock *1.....	99	49	72.0	3.73
Setauket *1.....	94	52	71.4	3.12	Harbor *1.....	91	46	71.5	1.88
Sherman *1.....	89	38	66.2	4.24	Hiram *1.....	93	48	69.8	3.93
South Canisteo *1.....	93	37	65.8	4.56	Jacksonboro *1.....	100	50	73.3	1.55
Southeast Reserv'r.....	91	43	67.2	6.06	Kenton *1.....	100	42	72.9	3.46
South Kortright *1.....	94	36	66.5	5.14	Leipsic.....	102	50	76.0	3.88
Turin.....	86	42	64.4	4.92	Logan *1.....	100	48	72.0	4.86
Utica.....	93	45	70.0	6.00	Lordstown *1.....	93	41	69.5	4.16
Varysburg.....	93	45	67.2	3.46					
Wappingers Falls.....	93	45	67.2	6.03					
Wedwood.....	96	43	67.8	7.24					
West Chazy.....	96	43	67.8	7.61					

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
Ohio—Cont'd.					Oregon—Cont'd.				
McArthur ¹	97	46	71.2	3.94	West Fork ¹	99	42	66.3	0.55
McConnelville ¹	96	48	73.1	5.24	Williams ¹	94	37	64.7	0.00
Mansfield ¹.....	.....	.....	.....	3.42	Pennsylvania.				
Marietta ¹.....	.....	.....	.....	2.82	Altoona ¹	98	52	75.6	2.50
Marion ¹	93	53	73.5	2.81	Aqueduct ¹	104	59	75.4	2.40
Montpelier ¹	96	43	71.0	3.82	Blooming Grove ¹	98	52	71.4	4.10
New Alexandria ¹	92	43	72.2	3.15	Blue Knob ¹	95	48	70.3	5.10
New Comerstown ¹	98	47	71.3	0.17	Brookville ¹.....	.....	.....	.....	3.63
New Holland ¹	98	48	73.1	3.73	Carlisle ¹	102	51	71.8	1.34
North Lewisburg ¹	98	48	75.4	4.09	Clarion ¹.....	.....	.....	.....	2.90
Oberlin ¹	95	47	71.1	5.12	Conestoga ¹	101	50	73.7	6.02
O. S. University ¹	95	47	73.3	3.13	Confidence ¹.....	.....	.....	.....	4.18
Orangeville ¹	96	40	70.0	2.35	Coopersburg ¹	97	52	73.0	3.48
Pomeroy ¹	96	47	74.9	6.26	Corry ¹	94	40	66.4	4.39
Portsmouth ¹.....	.....	.....	.....	4.02	Davis Island Dam ¹.....	.....	.....	.....	3.86
Portsmouth ¹	101	51	73.6	4.02	Driftown ¹	96	42	69.0	3.79
Sidney ¹.....	.....	.....	.....	3.83	Du Bois ¹.....	.....	.....	.....	2.91
Tiffin ¹	97	55	73.5	3.39	Dyberry ¹	94	39	66.6	2.41
Upper Sandusky ¹	96	48	72.5	2.55	East Mauch Chunk ¹	100	45	71.0	3.38
Van Wert ¹	100	43	72.9	3.48	Easton ¹	99	50	73.7	3.38
Wapakoneta ¹	97	48	74.3	3.08	Edinburg ¹	90	45	69.0	2.67
Wauseon ¹	99	44	72.7	2.95	Emporium ¹	97	44	70.8	2.67
Waverly ¹	103	48	74.3	3.10	Fl'ks of Neshami ¹.....	.....	.....	.....	74.1
Waynesville ¹.....	.....	.....	.....	1.74	Frederick ¹.....	.....	.....	.....	6.57
West Milton ¹	103	50	77.4	3.03	Freeport ¹.....	.....	.....	.....	3.19
Weymouth ¹	98	43	70.0	4.24	Girardville ¹	97	46	72.0	4.35
Wheeler ¹.....	.....	.....	.....	70.0	Grampian ¹	96	46	70.3	2.41
Youngstown ¹	98	48	70.6	4.73	Greensboro ¹.....	.....	.....	.....	4.96
Zanesville ¹	96	46	71.6	2.29	Hamburg ¹	103	46	74.0	2.41
Oklahoma Ter.					Holidaysburg ¹	98	44	69.0	3.68
Anadarko ¹	108	59	83.6	1.54	Hulmeville ¹	92	49	73.5	4.33
Buffalo ¹	102	70	85.4	2.53	Huntingdon ¹	100	45	72.7	3.48
Burnetts ¹	102	60	78.7	1.93	Johnstown ¹	98	47	72.3	3.70
Fort Reno ¹	102	55	79.8	1.80	Kane ¹	91	40	67.2	3.98
Fort Sill ¹	104	57	80.0	1.52	Kennett Square ¹	103	61	82.0	5.08
Gate City ¹	108	69	79.3	1.45	Kilmer ¹	103	61	82.0	5.08
Guthrie ¹	103	62	82.1	1.76	Lancaster ¹	97	62	74.4	1.85
Keokuk Falls ¹	101	61	81.0	2.81	Lebanon ¹	102	48	73.8	4.75
Kingfisher ¹	102	58	83.0	4.45	Le Roy ¹	96	47	70.2	2.39
Mangum ¹	105	58	82.4	1.15	Lewisburg ¹	102	40	72.7	3.40
Ponca ¹	101	53	79.0	3.28	Ligonier ¹	97	43	70.6	3.43
Sac & Fox Agency ¹	100	57	80.2	1.58	Lock Haven ¹.....	.....	.....	.....	3.92
Oregon.					Lock No. 4 ¹.....	.....	.....	.....	3.90
Albany ¹	89	42	63.0	0.62	Mahoning ¹.....	.....	.....	.....	2.87
Albany ¹	90	58	69.0	0.27	McConnellsburg ¹	101	47	71.7	4.70
Arlington ¹	103	45	71.6	0.13	Meadville ¹	95	48	71.0	2.40
Ashland ¹	91	51	68.1	0.00	Newcastle ¹	97	40	75.0	2.50
Ashland ¹	96	36	65.8	0.00	Oil City ¹.....	.....	.....	.....	3.83
Aurora ¹	95	47	66.5	0.66	Ottawa ¹.....	.....	.....	.....	4.50
Bake Oven ¹	92	45	66.0	0.64	Parkers Landing ¹.....	.....	.....	.....	2.41
Bandon ¹	67	40	57.0	0.93	Philadelphia ¹	103	59	77.2	3.35
Benlah ¹	100	41	64.4	0.00	Philadelphia ¹	100	57	75.7	5.10
Brownsville ¹	84	36	62.6	0.72	Phoenixville ¹	101	56	74.3	4.30
Burns ¹	94	31	62.4	0.01	Point Pleasant ¹.....	.....	.....	.....	3.90
Canyon City ¹	105	38	67.0	0.13	Port Carbon ¹	107	41	72.0	2.24
Comstock ¹	85	45	64.1	0.17	Pottstown ¹	100	40	75.0	3.66
Corvallis ¹	86	41	62.4	0.45	Quakertown ¹	103	44	72.2	4.50
Corvallis ¹	89	38	67.5	0.54	Reading ¹.....	.....	.....	.....	74.8
Crook ¹	96	38	61.2	0.21	Ridgway ¹.....	.....	.....	.....	3.37
East Portland ¹	86	43	60.7	0.20	Saegertown ¹	95	41	68.4	3.50
Eola ¹	85	42	60.7	0.50	Salem Corners ¹	94	50	69.2	4.00
Eugene ¹.....	.....	.....	.....	0.58	Saltsburg ¹.....	.....	.....	.....	4.66
Forest Grove ¹	90	38	62.5	0.69	Seisholtzville ¹.....	.....	.....	.....	3.80
Gardiner ¹	73	36	58.6	1.13	Selins Grove ¹	101	50	73.8	4.77
Glenora ¹	87	35	59.5	3.49	Smethport ¹	92	39	67.0	4.25
Grants Pass ¹	98	38	66.0	0.00	Smiths Corners ¹.....	.....	.....	.....	4.25
Grants Pass ¹	101	43	69.8	0.00	Somersett ¹	95	43	67.2	3.97
Happy Valley ¹	97	31	63.6	0.39	South Eaton ¹	97	44	69.9	3.14
Hardmann ¹	90	44	63.2	0.18	State College ¹	95	47	70.7	3.26
Heppner ¹	98	40	63.0	0.01	Stoyestown ¹.....	.....	.....	.....	6.98
Hood River, (near) ¹	87	42	63.8	0.27	Swarthmore ¹	99	56	74.2	3.83
Hubbard ¹	86	39	59.8	0.71	Uniontown ¹	93	51	73.1	7.11
Jacksonville ¹	94	42	66.4	0.00	Warren ¹.....	.....	.....	.....	4.20
Joseph ¹	92	35	61.0	0.20	Wellsboro ¹	96	38	64.5	2.15
Junction City ¹	90	52	70.5	0.06	West Chester ¹	99	56	74.6	5.87
Lafayette ¹	90	49	64.2	0.28	West Newton ¹	100	45	73.2	4.71
La Grande ¹	99	40	65.0	0.30	Wilkesbarre ¹	97	40	69.2	3.19
Lakeview ¹	98	39	66.6	0.08	Wyox ¹	99	49	74.0	8.50
Langlois ¹	79	44	60.6	0.85	Rhode Island.				
Leland ¹	98	38	69.9	0.11	Bristol ¹	90	55	70.7	1.45
Lone Rock ¹	95	32	59.8	0.16	Kingston ¹	92	47	70.2	2.78
McMinnville ¹	91	37	63.0	0.62	Kingston ¹	91	47	70.1	3.43
McMinnville ¹	88	34	66.1	0.47	Lonsdale ¹.....	.....	.....	.....	2.16
Monmouth ¹	86	40	63.2	0.04	Olneyville ¹	94	52	73.9	.....
Mount Angel ¹	89	43	63.8	0.53	Pawtucket ¹	95	53	73.5	2.16
Newberg ¹	90	44	64.4	0.73	Providence ¹	96	54	74.8	1.86
New Bridge ¹	105	41	70.9	0.03	Providence ¹	94	50	71.6	1.67
Pendleton ¹	104	35	66.6	0.03	South Carolina.				
Portland ¹	90	36	66.5	0.71	Allendale ¹	99	64	80.2	5.90
Riddle ¹	88	44	61.6	0.43	Salem ¹.....	.....	.....	.....	5.15
Roseburg ¹	94	51	64.3	0.40	Batesburg ¹	98	60	78.4	8.11
Salem ¹	76	40	58.0	0.38	Belmont ¹	96	60	77.6	3.15
Sheridan ¹	86	41	63.8	0.39	Blackville ¹	99	62	80.6	4.60
Silverton ¹	88	54	65.2	0.66	Camden ¹.....	.....	.....	.....	3.00
Siskiyou ¹	91	44	65.5	0.00	Cheraw ¹	99	51	76.4	13.47
Sparta ¹	98	32	65.0	0.00	Cheraw ¹.....	.....	.....	.....	12.67
Springfield ¹	98	54	67.0	0.00	Edinburg ¹	101	58	80.2	9.93
The Dalles ¹	95	47	68.7	0.27	Florence ¹.....	.....	.....	.....	10.26
Tillamook R'k L.H. ¹.....	.....	.....	.....	3.15	Green Pond ¹	95	63	79.6	8.68
Toledo ¹	85	40	61.2	0.05	Greenville ¹	92	54	73.7	7.16
Vale ¹	101	38	68.7	0.18	Greenwood ¹	95	50	77.4	4.29
Vernonia ¹	98	38	59.9	1.12					

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
<i>S. Carolina—Con.</i>					<i>Texas.</i>				
Hardeeville†	93	66	79.7	9.04	Albany*†	99	67	83.0	Ins.
Kingstree†	95	58	78.6	6.19	Arthur City†	.....	.....	.....	3.55
Mount Carmel†	.....	.....	.....	5.13	Austin*†	100	68	84.5	1.60
Nichols†	.....	.....	.....	9.19	Austin*†	97	69	84.5	.....
Port Royal*†	96	68	80.2	4.56	Belton†	102†	67†	84.2†	2.84
Saint Georges†	98	63	79.2	7.40	Big Spring	.....	.....	.....	2.70
Saint Matthews†	98	69	79.2	5.18	Boerne*†	.....	69	80.2	0.43
Saint Stephens†	.....	.....	.....	3.99	Brady†	99	60	82.6	0.43
Simpsonville†	99	59	77.2	3.91	Brazoria†	93	70	79.4	4.95
Society Hill†	94	64	76.7	11.28	Brenham†	101	68	84.6	1.00
Statesburg†	93	60	76.4	6.33	Brownwood†	102†	62†	82.4†	1.13
Tillers Ferry†	98	63	75.2	7.32	Burnet*†	93	73	84.7	1.36
Waterloo†	98	63	75.2	5.92	Camp Eagle Pass	104	68	87.8	0.78
Winnaboro†	100	59	78.8	4.70	Camp P. Colorado	99	59	79.3	1.00
Yorkville†	95	58	80.4	7.27	Childress†	106	61	85.6	1.06
<i>South Dakota.</i>					Coldwater†	.....	.....	.....	1.89
Aberdeen†	95	48	72.2	7.76	Colorado†	.....	.....	.....	0.30
Alexandria†	104	42	73.0	3.18	Columbia†	95	69	81.6	5.58
Ashcroft†	90	53	72.8	1.13	Corsecano†	99	62	82.2	3.40
Bowdle*†	90	50	71.6	2.85	Cuero†	101	68	86.2	1.63
Britton†	92	42	68.8	2.64	Dallas†	100	65	84.0	0.16
Brookings†	97	45	69.3	3.69	Dervine	98	66	84.1	0.46
Carthage	.....	.....	.....	2.98	Durham†	.....	.....	.....	4.46
Castlewold†	97	35	68.0	1.58	Duval*†	103	73	85.4	0.85
Clark†	99	45	70.8	2.60	Eastland*†	100	65	83.1	1.70
Cross†	94	38†	66.0†	3.14	Elmendorf†	100	66	82.9	3.73
De Smet†	98	41	69.4	2.62	Epworth†	94	68	78.8	1.05
Elkton†	96	52	66.6	2.60	Flower Bluff†	87	76	82.5	T.
Faulkton†	92	43	70.2	4.48	Floydada†	95	59	77.6	1.25
Flandreau†	95	45	69.4	3.86	Forestburg†	102	64	81.8	2.80
Forestburg†	96	46	70.8	1.01	Fort Clark	100	66	84.8	0.80
Forest City†	102	.....	.....	1.47	Fort Hancock	109	48	82.0	1.36
Fort Meade	101	47	72.5	1.04	Fort McIntosh	101	68	85.5	3.11
Fort Randall	108	45	75.2	0.69	Fort Ringgold	102	70	86.9	1.55
Fort Sully	100	50	75.4	1.03	Fredericksburg†	98†	64†	80.9†	0.75
Frankfort†	95	49	71.1	1.77	Gainesville†	98	63	80.8	2.06
Gary†	96	46	71.6	3.12	Graham†	103	63	85.0	1.28
Highmore*†	98	54	72.7	1.20	Grape Vine†	100	56	84.8	1.94
Hitchcock	.....	.....	.....	2.45	Hallettsville*†	101	65	83.3	1.78
Hotch City†	101	43	73.2	0.72	Hartley†	102	54	77.7	2.21
Howard†	96	40	70.3	2.21	Haskell†	102	70	87.6	3.99
Kimball†	103†	49†	74.0†	0.28	Hearne†	98	68	82.6	0.18
Mellette*†	94	58	72.7	6.17	Houston†	96	68	86.5	4.51
Millbank†	95	48	71.0	3.80	Huntsville†	96	66	83.0	2.70
Mitchell†	96	46	71.9	1.73	Kent	.....	.....	.....	1.14
Oelrichs†	98	42	70.0	1.77	Longview†	100	67	83.3	2.27
Onida†	98	49	70.2	1.07	Luling†	102	58	82.8	0.25
Parker†	102	40	72.8	.....	Marshall†	94	71	81.7	5.97
Parkston†	100	35	67.9	0.86	Menardville*†	97	69	82.0	0.00
Piedmont	.....	.....	.....	1.74	Mequite†	100	58	82.0	3.14
Plankinton†	96	45	72.5	1.31	Mountain Spring†	100	65	82.0	1.86
Rosebud†	103	49	73.8	1.38	Nacogdoches†	.....	.....	.....	1.83
Salem†	95	40	71.0	1.62	New Braunfels†	98	67	83.7	2.41
Sioux Falls†	90	41	71.6	0.63	New Ulm†	102	68	83.4	1.25
Spearfish†	102	47	73.2	0.73	Ochiltree†	.....	.....	.....	2.13
Traverse†	96	38	67.6	2.85	Orange†	94	66	83.8	6.49
Tyndall†	98	48	74.8	0.68	Paris†	102	66	82.5	2.10
Webster†	96	43	70.8	3.72	Quannah†	106	63	84.4	3.30
Wentworth†	98	46	70.4	2.41	Red River City†	.....	.....	.....	2.36
Wessington†	.....	.....	.....	0.87	Roby†	105†	60†	83.4†	7.11
Wessington Spgs†	98	48	71.7	0.94	Round Rock†	100	70	85.4	1.30
Woley*†	95	52	71.3	2.34	San Angelo†	102	61	87.2	0.70
<i>Tennessee.</i>					San Antonio†	98	66	84.8	0.04
Andersonville*†	94	59	74.9	4.16	Sierra Blanca†	103	60	81.4	0.37
Arlington†	97	63	77.6	10.08	Silver Falls†	102	58	81.6	1.43
Ashwood†	92	63	76.2	8.12	Temple†	95	62	81.3	0.80
Austin*†	96	66	78.1	5.15	Tyler†	99	62	80.8	1.82
Bethel Springs*†	90	64	76.6	8.42	Venus†	100	66	82.1	1.99
Bolivar†	92	64	76.8	7.70	Victoria*†	97	70	86.2	1.52
Brownsville†	98	62	79.2	7.00	Waco†	99	68	83.9	1.19
Carthage†	.....	.....	.....	3.35	Weatherford†	100	58	82.4	2.06
Charleston†	.....	.....	.....	6.82	Wichita Falls*†	100	66	84.5	3.00
Clarksville†	94	62	76.7	4.25	<i>Utah.</i>				
Clinton†	.....	.....	.....	6.28	Cisco†	106	49	78.8	0.20
Columbia†	.....	.....	.....	9.67	Corinne*†	101	60	76.9	1.35
Covington†	91	62	76.6	8.46	Deseret†	100	43	74.2	0.42
Covington†	100	61	81.4	6.38	Fillmore†	108	44	75.6	2.29
Dunlap	.....	.....	.....	9.71	Fort Du Chene	97	42	70.8	0.16
Dyersburg†	98	62	78.8	5.68	Grouse Creek†	104	44	75.0	0.27
Fayetteville*†	95	62	76.9	4.58	Kelton*†	102	60	80.1	1.00
Florence Station*†	92	64	76.1	4.38	Lake Park	95	50	73.8	0.09
Franklin†	95	61	75.5	5.11	Levan†	.....	.....	.....	73.6
Hohenwald†	98	61	78.0	6.76	Loa†	94	38	67.6	0.20
Jacksonboro*†	93	58	71.7	3.55	Moab†	103	51	76.4	3.37
Jackson†	95	64	77.7	10.33	Mount Carmel*†	94	36	70.1	1.03
Johnsonville†	.....	.....	.....	10.12	Ogden*†	100	50	78.9	0.80
Kingston†	.....	.....	.....	4.90	Ogden†	.....	.....	.....	78.7
Loudon†	.....	.....	.....	4.45	Park City†	.....	.....	.....	74.9
Lynnville*†	97	61	75.2	6.12	Parowan†	100	43	73.8	0.66
McMinnville*†	91	66	75.8	5.36	Promontory*†	96	60	77.7	0.70
Milan†	99	61	78.7	6.17	Provo City†	.....	.....	.....	74.9
Missionary Ridge*	.....	61	74.4	.....	Richfield†	100	42	71.8	0.11
Newport†	97	62	76.0	3.16	Saint George†	110	62	83.2	0.11
Nunnely*†	92	64	75.8	7.04	Scofield†	86	39	60.3	0.67†
Riddleton†	96	60	76.6	2.42	Soldiers Summit†	95	27	63.0	0.13
Rockwood†	.....	.....	.....	4.62	Stockton†	.....	.....	.....	71.5
Rogersville*†	93	61	73.6	5.90	Terrace†	99	65	83.5	0.00
Rugby*†	90	61	74.6	2.33	Thistle†	94	41	67.8	0.03
Savannah*†	96	64	77.3	8.12	<i>Vermont.</i>				
Sharp†	96	66	77.2	8.60	Brattleboro	96	42	71.1	2.35
Springdale*†	96	58	75.4	3.99	Burlington†	92	50	71.2	7.06
Strawberry Plains†	.....	.....	.....	2.98	Chelsea*†	86	42	62.2	2.59
Sweet Water†	.....	.....	.....	2.07	Cornwall	.....	.....	.....	3.47
Waynesboro*†	93	60	74.0	7.18	Enosburg Falls†	91	38	68.0	5.78
					Hartland†	89	39	65.8	2.14

Meteorological record of voluntary observers, &c.—Continued.

Stations.					Temperature. (Fahrenheit.)				Precip'n.	Stations.					Temperature. (Fahrenheit.)				Precip'n.						
					Max.	Min.	Mean								Max.	Min.	Mean								
* Vermont—Cont'd.											West Virginia—Con.														
Saxtons River ¹	93	39	67.9	2.12						Point Pleasant*† ¹	99	52	74.3	7.68											
Simonsville ¹	91	36	66.4	.....						Rowlesburg†.....	97	50	71.2	3.56										
Stratford* ¹	85	45	66.4	0.91						Spencer†.....	98	58	76.8	2.48											
Vernon* ⁶	96	54	72.8	3.88						Tannery* ¹	97	50	71.2	.....										
Wells.....	90	43	67.1	4.64						Weston†.....	97	50	71.2	4.85											
Woodstock.....	94	41	68.3	1.25						Wheeling a†.....	97	53	76.3	5.48											
Virginia.											White Sul. Springs†.....										0.90				
Abingdon†.....	7.00						Wisconsin.															
Ashland.....	99	51	75.3	5.37						Amherst.....	94	45	72.2	3.30											
Avon†.....	102	51	75.2	0.85						Baraboo†.....	93	44	70.2	1.31											
Bedford City†.....	95	54	74.7	4.05						Barron†.....	91	41	66.8	4.61											
Big Stone Gap† ¹	93	50	69.4	4.27						Bayfield.....	96	47	66.4	3.63											
Birdsneat†.....	95	62	76.9	5.05						Beaver Dam.....	98	54	70.4	3.77											
Blacksburg†.....	95	51	73.3	1.77						Black River Falls†.....	98	40	69.6	5.62											
Cape Charles† ¹	94 ^a	54	70.7	3.00						Cadiz ².....	.....	.....	70.4	1.70									
Christiansburg†.....	.....	.....	.....	3.11						Centralia.....	100	46	72.8	3.58								
Clarksburg†.....	.....	.....	.....	2.01						Chippewa Falls†.....	.....	.....	70.4	7.81						
Clifton Forge*.....	98	54	77.4	.....						Crandon†.....	.....	.....	70.4	4.12								
Dale Enterprise*† ¹	97	43	75.3	3.14						Delavan (near)* ³	82	55	69.1	5.41											
Danville†.....	.....	.....	.....	7.14						Depere.....	93	48	70.0	2.49								
Healing Springs.....	92	50	72.5	.....						Embarrass*† ¹	90	52	70.4	4.05										
Hot Springs.....	86	54	67.7	2.33						Florence ¹	93	38	66.8	4.75											
Lexington†.....	98	48	74.0	1.62						Fond du Lac†.....	92	46	70.5	4.56											
Marion†.....	93	48	72.4	4.74						Harvey†.....	96	46	71.2	2.65											
Mossing Ford*† ²	95	.....	75.7	0.79						Hillsboro.....	94	40	68.6	1.39										
Nottaway.....	100	49	78.2	1.08						Hudson.....	96	49	71.2	9.90											
Petersburg†.....	100	52	76.6	5.02						Janesville.....	94	48	72.9	2.90											
Richmond†.....	102	55	78.4	4.18						Koepenick*† ¹	98	50	72.0	3.50											
Salem†.....	96	50	75.8	1.63						Lancaster†.....	95	49	71.4	3.88											
Spottsville† ¹	98	50	75.4	4.38						Lincoln ².....	.....	.....	73.6	3.20									
Stanardsville†.....	101	53	75.4	1.22						Madison.....	90	50	71.6	2.31											
Staunton† ¹	98	50	73.3	1.55						Manitowoc ¹	95	46	70.1	3.03											
Warm Springs.....	80	48	63.3	.....						Meadow Valley†.....	96	45	70.9	3.17										
Woodstock†.....	.....	.....	.....	2.40						Medford a†.....	.....	.....	70.9	4.90						
Wytheville†.....	48	.....	.....	1.88						Medford b†.....	92	42	68.1	4.85									
Washington.											Menomonie.....										98	44	70.6	8.31	
Aberdeen† ¹	79	43	57.8	1.70						Neillsville†.....	91	41	68.6	4.05											
Centerville†.....	97	35	66.3	0.47						New Holstein†.....	93	47	71.5	4.56											
Chehalis†.....	88	40	61.0	0.90						Oconomowoc†.....	93	47	71.2	1.14											
Chelan†.....	97	46	70.9	0.47						Oconto.....	93	45	69.4	2.84											
Colfax†.....	98	36	62.7	0.17						Osceola† ¹	94	46	71.1	6.22											
East Sound†.....	79	47	61.0	1.70						Oshkosh†.....	92	50	72.0	7.00											
Eatonville†.....	.....	.....	.....	2.58						Pepin.....	.....	.....	70.9	7.09						
Ellensburg†.....	93	38	65.7	0.25						Plorer† ¹	94 ¹	38 ¹	70.9	3.13											
Fort Simcoe* ¹	98	57	72.2	0.00						Portage†.....	.....	.....	70.9	1.79									
Fort Spokane.....	104	40	66.8	0.81						Prairie du Chien.....	98	45	72.8	2.82											
Fort Townsend.....	80	41	58.4	0.90						Richland Center†.....	96	47	72.7	3.09											
Madrone.....	83	44	61.6	1.47						Rhineland ¹	95	44	67.4	.....										
Moxee Valley† ¹	98 ^a	37	72.7	0.20						Shawano.....	92	40	68.2	2.30											
Olga†.....	71	47	57.9	1.76						Shell Lake.....	91	44	70.3	4.07											
Pine Hill* ¹	92	56	68.8	0.26						Sparta b† ¹	95	43	70.2	3.81											
Pomeroy†.....	94	46	71.0	0.07						Valley Junction†.....	93	42	68.3	3.31											
Rosalie† ¹	96	35	62.9	0.45						Viroqua.....	90	52	69.9	3.11											
Seattle†.....	88	46	63.4	1.29						Watertown.....	96	45	71.5	1.21											
Sehome† ¹	76 ¹	43 ^a	57.2 ^a	1.07						Waukesha†.....	.....	.....	71.5	1.60									
Tacoma.....	88	46	61.8	1.27						Westfield†.....	94	44	70.8	4.03											
Waterville†.....	94	35	63.4	0.62						Weston*† ³	95	44	70.2	6.68											
West Virginia.											Whitehall†.....										97	43	70.3	5.53	
Buckhannon a†.....	2.60						Wyoming.															
Buckhannon b†.....	95	47	70.7	.....						Camp Pilot Butte.....	94	40	65.6	0.52										
Central Station*† ⁶	96	56	78.9	7.20						Casper†.....	112	48	78.4	.....										
Charleston a†.....	98	56	76.2	4.15						Evansville†.....	87	35	62.9	T.											
Charleston b† ¹	94	60	73.8	4.25						Fort McKinney.....	98	36	67.7	T.											
Davis.....	92	41	67.2	1.34						Fort Washakie.....	94	40	67.7	0.62											
Elkhorn†.....	93	48	71.7	2.79						Fort Yellowstone.....	89	36	62.2	0.98											
Ellat† ¹	91	50	71.7	6.66						Lander.....	90	43	68.4	2.20											
Fairmont†.....	.....	.....	.....	4.39						Lusk†.....	98	40	67.8	1.73								
Glenville†.....	93	50	72.6	2.92						Saratoga†.....	91	31	65.3	T.											
Grafton†.....	96 ^f	50 ^f	73.7 ^f	3.32						Sundance.....	95	43	68.2	1.14											
Harpers Ferry†.....	.....	.....	.....	1.89						Wheatland†.....	109	45	70.6	0.01								
Harrisville†.....	97	5.06						Canada.															
Hinton†.....	.....	.....	.....	3.17						Fort Francis, Ont. ¹	92	31	61.2	3.50								
Huntington†.....	95	52	75.6	6.41						Mexico.															
Kingwood†.....	93	50	68.9	3.60						La Logia.....	100	72	85.9	0.10											
Martinsburg†.....	98	58	77.1	2.50						Leon de Aldamas.....	87	57	71.8	3.72											
Moorefield†.....	98	48	75.1	3.64						Mazatlan.....	90	74	82.9	1.97											
Morgantown a†.....	.....	.....	.....	6.98						Mexico.....	79	49	64.4	1.91								
New Martinsville*† ¹	95 ^a	58 ^a	76.8 ^a	4.40						Puebla ¹	80	50	64.8	4.45											
Nuttallburg.....	97	52	75.0	4.16						Topolobampo* ³	96	80	83.6	0.28											
Parkersburg† ¹	97	48	72.2	3.99						Vera Cruz.....	89	73	81.5	17.18											
Phillippi†.....	3.54						West Indies.															
Piedmont*† ¹	95	50	71.4	1.21						Hamilton, Ber ¹	86	72	78.6	4.54											
Pleasant Hill* ³	90	46	66.9	6.03																					

Reports received too late to be used in general discussion of weather for July, 1892.

Alabama.						Georgia—Cont'd.					
Lock No. 4 ¹	66	.....	8.68	.....		Lithia Springs ¹	97	.....	76.0	4.17	
Tuscaloosa ¹.....	.....	.....	10.03	.....		Kansas.					
Wetumpka ¹	69	.....	10.10	.....		Emporia ¹	97	58	77.4	5.30	
Alaska.						Montana.					
Killiknoo ¹	72	40	52.1	5.95		Boulder ¹	92	38	61.8	1.10	
Bakersfield ¹	110	70	86.5	0.00		Bozeman ¹	105	34	67.4	1.41	
Crescent City L. H. ¹.....	.....	.....	0.66	.....		Choteau ¹	91	33	63.6	0.83	
Humboldt L. H. ¹.....	.....	.....	0.12	.....		Dearborn Canyon ¹	83	39	60.1	0.57	
Lime Point L. H. ¹.....	.....	.....	0.03	.....		Deer Lodge City ¹	95	32	65.4	1.30	
Point Bonita L. H. ¹.....	.....	.....	0.24	.....		Elk Park ¹	87	25	55.2	1.11	
Point George L. H. ¹.....	.....	.....	0.67	.....		Glendive ¹	112	44	75.1	3.08	
Blairsville ¹	59 ^e	.....	8.06	.....		Great Falls ¹	99	40	68.2	3.02	
						Horro ¹	95	41	66.6	0.19	
						Martinsdale ¹	94	36	70.0	2.00	

Reports received too late, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
Montana—Cont'd.	0	0	0	Ins.	North Dakota.	0	0	0	Ins.
Powder River †.....	105	44	73.2	1.44	Forman †.....	94	.....	.....	4.50
Virginia City †.....	92	38	62.6	1.16	Texas.				
New York.					College Station	105	67	83.5	4.20
Lockport.....	92	45	69.8	5.36	Corsicana †.....	102 ^a	58 ^b	80.5	1.21
Lyons ¹	92	50	70.2	2.94	Dallas †.....	99	70	86.8	1.30
North Carolina.					Panther †.....	107	70	84.4	1.84
Currituck Inlet †.....	.....	.....	.....	4.07	West Virginia.				
					Morgantown †.....	103	54	76.6	6.97

Received too late for publication in June, 1892.

<i>Alaska.</i>					<i>Nebraska.</i>				
Coal Harbor† ¹	68	38	51.9	.....	Harvard * ¹	100	50	72.3	1.99
<i>California.</i>					<i>North Carolina.</i>				
Riverside a†.....	100	42	68.2	0.10	Currituck Inlet f.....	.....	.....	.....	4.64
<i>Kansas.</i>					<i>Ohio.</i>				
Emporia† ¹	94	49	75.9	1.35	Westerville ¹	90 ^h	59 ^h	72.0 ^h	5.05
<i>Louisiana.</i>					<i>Virginia.</i>				
Coushatta b.....	99	55	80.2	1.34	Cape Charles† ¹	96	60	76.6	1.20
<i>Minnesota.</i>					<i>Mexico.</i>				
Caledonia†.....	88	44	64.2	8.90	Mazatlan.....	87	73	80.6	0.19
<i>Missouri.</i>					<i>Mexico</i>				
Warrensburg * ¹	94	54	72.2	4.17		85	51	75.2	3.43

Table of miscellaneous meteorological data for July, 1892—Weather Bureau observations.

Districts and stations.	Elevation above sea-level, feet.	Length of record, years.	Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.					Humidity and precipitation.					Wind.			Cloudiness.			Mean temperature data since opening of station.										
			Mean pressure, 8 a. m. and 8 p. m. + 2.	Mean reduced.	Departure from normal.	Mean max. and min. + 2.	Departure from normal.	Maximum.	Date.	Mean minimum.	Date.	Mean range.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.	Departure from normal.	Days with .01 or more.	Total movement, miles.	Prevailing direction.	Maximum velocity.		Cloudless days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Highest for month.	Year.	Lowest for month.	Year.			
																				Miles per hour.	Direction.											
New England.																																
Eastport.....	53	20	29.91	29.97	+ .05	69.2	+ 0.8	88	26	71	48	5	53	33	53	78	2.51	2.2	9	5,076	s.	29	sw.	3	5	23	3	5.362	1892	57.8	1891	
Portland.....	103	21	29.88	29.98	+ .06	68.8	+ 0.5	90	26	77	49	17	61	26	53	70	2.68	1.0	9	5,621	s.	30	nw.	4	17	8	6	4.772	1876	65.0	1891	
Manchester.....	247	6	29.76	30.01	.....	70.8	.....	93	26	82	47	5	59	32	58	66	1.72	.....	12	2,695	nw.	27	nw.	4	17	10	4	3.672	1887	67.0	1891
Mount Washington.....	6,279	23	23.91	30.01	+ .08	47.4	.....	65	12	53	28	5	42	17	43	88	3.48	7.2	11	19,918	nw.	90	nw.	4	3	17	11	6.353	1887	44.6	1884
Northfield.....	872	6	29.10	30.01	.....	66.0	.....	90	29	78	38	5	53	36	59	75	2.88	.....	12	5,507	sw.	45	w.	29	6	21	4	5.170	1887	62.6	1890
Boston.....	125	23	29.90	30.03	+ .09	73.0	+ 1.2	85	26	81	54	17	65	25	59	64	2.56	1.0	11	7,117	sw.	34	sw.	3	15	13	3	3.674	1872	68.0	1884	
Nantucket.....	14	6	30.04	30.05	.....	68.0	.....	87	26	81	54	17	65	25	59	64	0.91	.....	8	6,751	sw.	28	sw.	3	13	13	5	4.570	1887	64.6	1891
Woods Hole.....	15	6	.....	.....	.....	68.0	+ 0.4	87	29	74	56	2	63	18	.....	.....	1.64	1.7	12	9,637	sw.	48	sw.	3	14	5	4	4.971	1876	65.4	*
Vineyard Haven.....	37	13	30.03	30.06	+ .09	73.0	.....	88	29	82	52	7	64	32	.....	.....	1.45	.....	13	.....	sw.	.....	.....	14	4	13	.....	73.2	1887	68.1	*
Block Island.....	11	.....	.....	.....	.....	68.6	.....	88	29	82	52	7	64	32	.....	.....	2.45	0.7	11	9,562	sw.	44	sw.	3	11	16	4	4.571	1887	65.0	1891
Narragansett Pier.....	107	20	29.92	30.03	+ .06	70.2	.....	93	26	79	42	17	61	29	63	85	1.66	2.1	13	.....	sw.	.....	.....	12	14	.....	73.5	1887	66.8	1888	
New Haven.....	47	22	29.98	30.03	+ .06	71.6	+ 0.3	95	26	79	50	17	62	27	65	81	4.33	1.0	13	4,923	sw.	36	sw.	3	15	12	4	4.177	1876	67.6	1891	
New London.....	47	22	29.98	30.03	+ .06	70.8	.....	92	26	79	52	17	63	24	64	82	2.57	1.8	13	4,405	sw.	30	sw.	3	9	15	7	5.074	1876	66.6	1891
Mid. Atlantic States.																																
Albany.....	85	19	29.94	30.03	+ .10	73.0	.....	95	29	84	49	2	62	28	63	74	4.22	0.2	12	4,726	s.	27	s.	3	7	19	5	5.076	1887	69.1	1891
New York, N. Y.....	185	23	29.87	30.06	+ .08	74.8	+ 1.0	95	26	84	53	17	66	23	63	70	2.45	2.1	9	5,461	sw.	40	sw.	3	9	15	7	5.176	1887	70.1	1884	
Harrisburg.....	377	5	29.67	30.07	.....	74.2	.....	98	26	85	53	2	64	29	63	71	6.48	.....	11	3,304	w.	41	sw.	3	10	15	6	4.574	1892	69.6	1891
Philadelphia.....	117	22	29.95	30.07	+ .08	76.6	+ 0.6	101	26	86	59	17	68	25	63	68	2.97	1.6	9	6,375	nw.	36	sw.	3	12	10	9	5.079	1887	71.8	1884	
Atlantic City.....	53	19	30.03	30.06	+ .10	70.4	+ 1.8	90	28	76	52	8	64	22	65	84	4.23	0.8	7	6,623	sw.	40	sw.	3	7	19	5	4.875	1887	68.8	1891	
New Brunswick.....	179	22	29.88	30.07	+ .09	76.4	.....	99	26	86	58	2	63	31	.....	.....	3.10	.....	10	.....	sw.	.....	.....	3	25	3	3	4.181	1872	71.6	1891
Baltimore.....	112	23	29.97	30.09	+ .10	75.4	+ 1.8	99	26	85	54	8	66	27	66	76	5.04	0.4	11	3,520	s.	36	nw.	27	16	9	6	4.481	1876	72.0	1891	
Cape Henry.....	19	.....	.....	.....	.....	75.4	+ 3.2	98	27	83	59	5	66	22	.....	.....	3.87	0.1	14	.....	sw.	.....	.....	15	9	7	4	4.81	1887	75.0	1891
Lynchburg.....	685	23	29.39	30.11	+ .11	76.8	+ 1.7	100	27	87	54	9	66	29	66	72	5.74	2.0	11	2,761	sw.	37	sw.	23	8	18	5	5.182	1877	73.2	1891	
Norfolk.....	57	23	30.04	30.10	+ .09	76.4	+ 1.7	99	27	84	57	9	66	24	69	84	8.27	2.7	14	5,457	s.	37	sw.	3	10	15	6	4.822	1872	75.0	1891	
S. Atlantic States.																																
Charlotte.....	773	14	29.32	30.11	+ .08	76.8	+ 3.1	97	28	86	58	8	68	25	67	80	5.89	0.1	14	4,266	sw.	34	sw.	2	12	9	10	5.482	1881	74.7	1891	
Hatteras.....	11	13	30.12	30.13	+ .10	76.2	+ 1.7	97	28	86	58	8	68	25	67	80	6.45	0.3	11	8,740	sw.	36	n.	4	14	11	5	4.679	1883	75.0	1888	
Kittyhawk.....	9	18	30.08	30.09	.....	75.4	+ 3.3	93	27	83	56	9	72	13	71	87	6.46	0.4	18	9,137	sw.	45	w.	10	8	18	5	5.381	1887	75.1	1891
Raleigh.....	388	6	29.70	30.11	.....	76.8	.....	98	28	86	58	8	68	25	69	79	4.18	.....	13	3,516	s.	22	w.	30	11	7	13	5.979	1887	74.0	1891
Southport.....	34	17	30.10	30.13	.....	77.1	+ 2.7	97	28	82	61	8	72	16	72	84	6.31	0.4	11	7,016	sw.	35	s.	10	13	11	7	4.382	1880	77.1	1892
Wilmington.....	78	23	30.05	30.13	+ .10	78.1	+ 3.0	96	28	85	60	8	71	20	71	85	10.26	2.9	14	4,688	sw.	36	sw.	3	5	20	6	5.845	1872	76.6	1891	
Charleston.....	52	23	30.10	30.15	+ .11	80.2	+ 2.1	95	29	87	65	1	73	20	72	83	10.33	2.9	16	6,111	sw.	36	sw.	20	5	19	7	5.849	1872	79.1	1874	
Columbia.....	6	.....	.....	.....	.....	82.4	.....	101	30	90	64	8	75	26	.....	.....	4.71	.....	11	.....	sw.	.....	.....	10	12	9	.....	82.4	1892	77.2	1891
Augusta.....	209	21	29.93	30.15	+ .11	79.2	+ 3.0	97	30	87	64	7	71	23	70	80	4.13	1.0	11	2,234	s.	24	nw.	4	10	12	9	5.548	1878	77.9	1886	
Savannah.....	87	23	30.06	30.15	+ .10	80.3	+ 2.5	97	29	89	65	8	72	23	72	84	6.37	1.2	17	5,155	s.	24	w.	4	21	6	10	6.847	1875	79.1	1874	
Jacksonville.....	43	21	30.11	30.16	+ .11	81.7	+ 0.9	95	31	91	66	6	73	24	72	79	3.16	3.4	15	5,036	sw.	31	sw.	16	3	18	10	6.284	1875	80.0	1874	
Florida Peninsula.																																
Jupiter.....	28	5	30.13	30.16	.....	80.4	.....	90	28	87	70	16	74	19	75	83	0.08	.....	4	5,717	se.	22	se.	25	22	9	0	3.281	1884	80.3	1891
Key West.....	22	22	30.12	30.14	+ .08	82.0	+ 2.4	88	24	87	71	4	77	14	73	74	1.69	2.7	11	6,436	e.	36	n.	14	5	19	0	5.686	1881	82.0	1892	
Mico.....	.....	.....	.....	.....	.....	84.0	.....	91	25	95	69	15	73	28	.....	.....	1.10	.....	4	.....	se.	.....	.....	4	18	0	.....	.....	.....	.....	.....
Tampa.....	36	.....	30.13	30.17	.....	82.0	.....	94	28	91	70	7	73	23	74	82	3.94	.....	13	3,468	se.	36	sw.	5	4	22	5	5.6	.....	.....	.....
Titusville.....	44	6	30.13	30.17	.....	80.4	.....	93	20	88	68	11	73	20	73	80	0.97	.....	7	7,882	se.	36	sw.	14	15	15	1	3.681	1891	79.4	1889
Eastern Gulf States.																																
Atlanta.....	1,131	14	28.97	30.13	+ .06	76.4	+ 2.9	94	24	84	59	7	69	23	68	80	3.77	0.9	12	5,883	sw.	32	w.	4	2	14	15	7	3.80	1881	75.4	1891
Pensacola.....	56	13	30.05	30.11	+ .06	79.4	+ 3.3	92	30	85	67	8	74	17	74	84	11.48	+ 4.7	17	5,864	sw.	32	sw.	8	7	18	6	6.082	1881	78.5	1882	
Auburn.....	11	.....	.....	.....	.....	77.2	.....	92	.....	84	64	7	71	19	.....	.....	5.05	.....	18	.....	e.	.....	.....	4	10	17	.....	84.6	1887	74.7	1882
Mobile.....	35	22	30.06	30.10	+ .06	79.0	+ 2.7	93	30	86	69	31	72	13	73	86	11.43	+ 8.0	23	4,744	sw.	36	sw.	30	0	14	17	7.2	85	1877	78.6	*
Montgomery.....	217	20	29.88	30.12	+ .06	79.4	+ 3.8	95	24	88	66	5	71	22	73	85	9.56	+ 3.5	18	3,346	sw.	22	nw.	12	3	5	23	7.985	1875	78.8	1882	
Meridian.....	358	.....	29.72	30.10	.....	78.2	.....	95	23	87	61	19	69	26	73	87	11.41	.....	24	3,465	sw.	28	n.	24	1						

Table of miscellaneous meteorological data for July, 1892—Weather Bureau observations—Continued.

Districts and stations.	Elevation above sea level, feet.	Length of record, years.	Pressure, in inches.		Temperature of the air, in degrees Fahrenheit.					Humidity and precipitation.					Wind.				Cloudless days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Mean temperature data since opening of station.									
			Mean pressure, 8 a. m. and 8 p. m. + 2.	Mean reduced.	Departure from normal.	Mean max. and min. + 2.	Departure from normal.	Maximum.	Date.	Mean minimum.	Date.	Greatest daily range.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.	Departure from normal.	Days with - or more.	Total movement, miles.					Prevailing direction.	Maximum velocity.	Direction.	Date.	Highest for month.	Year.	Lowest for month.	Year.		
Ex. Northwest—Con.																																
Saint Vincent	804	12	29.10	29.94	+ .03	66.7	+ 1.5	88	26	80	41	3	54	39	59	77	1.70	- 1.0	7	7,028	nw.	40	sw.	7	18	6	7	3.5	69.3	1886	60.8	1884
Bismarck	1,698	18	28.17	29.92	+ .02	68.6	- 1.8	90	* 80	44	3	28	57	34	56	66	3.13	+ 0.7	9	7,282	se.	46	n.	11	14	14	3	3.6	75.2	1886	64.3	1884
Fort Buford	1,899	14	27.93	29.87	- .01	69.7	- 0.5	100	19	83	43	28	56	46	51	58	4.49	+ 2.5	10	6,211	ne.	44	e.	10	19	9	3	3.4	75.6	1886	64.0	1884
Upper Miss. Valley.																																
Minneapolis	758	22	29.22	30.01	.....	71.6	.....	91	23	81	52	3	62	26	.....	.....	11.87	.....	11	.....	se.	.....	.....	1	21	9	.....	.....	.....	.....	.....
Red Wing	850	22	29.14	30.02	+ .09	71.3	- 0.7	90	23	80	51	3	62	24	60	70	9.04	+ 5.7	11	4,360	se.	35	nw.	27	12	17	2	4.3	.....	.....	.....
Saint Paul	720	20	29.29	30.04	+ .09	72.2	- 1.1	93	27	82	50	1	63	27	61	71	3.97	+ 0.5	11	4,040	s.	26	nw.	26	12	16	3	4.7	76.6	1874	66.8	1891
Davenport	613	21	29.43	30.07	+ .08	74.0	- 1.2	94	25	83	51	1	65	23	63	71	4.16	+ 0.3	10	5,632	sw.	40	nw.	20	15	7	9	4.4	78.0	.....	69.2	1891
Des Moines	869	14	29.12	30.02	+ .05	73.8	- 1.2	95	23	83	50	1	64	24	64	73	8.64	+ 5.2	12	5,318	se.	36	se.	20	10	14	7	4.9	78.4	1886	68.4	1882
Dubuque	651	20	29.36	30.04	+ .07	74.2	- 0.1	95	26	83	48	1	65	25	65	77	5.08	+ 0.5	12	2,958	se.	25	n.	20	12	10	9	5.2	78.3	1874	68.8	1891
Keokuk	613	21	29.40	30.04	+ .07	74.6	- 2.6	94	24	84	50	1	66	25	66	75	6.18	+ 1.9	11	3,714	sw.	30	nw.	20	11	13	7	4.6	81.5	1878	70.6	1891
Cairo	359	22	29.70	30.07	+ .08	76.7	- 2.3	94	25	85	60	1	69	24	69	78	1.73	- 1.9	9	4,788	s.	36	nw.	20	6	17	8	5.8	82.5	.....	74.8	1891
Springfield, Ill.	644	14	29.39	30.06	+ .06	74.2	- 3.0	94	* 83	52	1	65	25	64	74	5.63	+ 3.3	13	2,287	sw.	34	s.	2	10	14	7	5.0	81.0	1871	71.0	1891	
Hannibal	534	22	29.49	30.05	.....	74.4	.....	95	19	84	47	1	65	37	65	75	3.69	.....	11	5,120	sw.	44	nw.	2	12	9	10	5.1	.....	.....	.....	.....
Saint Louis	571	22	29.46	30.05	+ .06	77.1	- 2.4	96	24	85	58	1	70	22	68	76	4.64	+ 1.2	13	7,191	sw.	48	nw.	20	13	10	8	4.9	83.7	1887	73.8	1882
Missouri Valley.																																
Columbia .....	.....	.....	.....	.....	.....	75.0	.....	97	19	86	45	1	64	33	.....	.....	7.62	.....	11	4,050	e.	34	nw.	15	13	14	4	4.0	.....	.....	.....	.....
Kansas City	963	5	29.03	30.02	.....	75.9	.....	98	21	85	55	1	67	25	67	75	4.76	.....	10	5,262	se.	38	nw.	2	10	17	4	4.6	80.5	1890	72.4	1891
Springfield, Mo.	1,350	6	28.66	30.04	+ .05	75.2	- 2.8	96	22	85	54	1	66	28	65	77	5.13	+ 0.6	12	4,863	s.	27	nw.	13	8	18	5	5.1	79.0	1888	72.2	1891
Leavenworth	857	22	29.14	30.03	+ .06	76.2	- 2.3	98	20	86	54	1	67	24	65	71	3.42	- 1.0	10	5,447	s.	32	sw.	2	10	15	6	5.0	82.3	1874	72.5	1882
Topeka	998	6	28.98	30.01	.....	76.8	.....	100	21	87	54	1	66	28	65	71	6.37	.....	8	5,582	s.	36	nw.	15	11	16	4	4.2	80.9	1890	72.0	1891
Omaha	1,113	22	28.87	30.01	+ .04	76.0	- 1.1	100	23	86	54	29	66	30	62	66	3.64	- 1.7	10	4,926	se.	42	nw.	21	13	15	3	4.0	79.6	1884	71.2	1891
Crete .....	.....	.....	.....	.....	.....	75.6	.....	102	21	88	50	29	63	33	.....	.....	4.60	.....	6	.....	se.	.....	.....	21	6	4	.....	79.4	1890	71.1	1891	
Valentine	2,613	7	27.32	29.95	+ .01	73.4	+ 0.3	104	20	85	51	2	61	38	56	62	1.67	- 1.4	10	7,917	s.	44	n.	25	9	19	3	5.0	75.7	1886	67.8	1891
Sioux City	1,158	.....	28.79	29.98	.....	75.4	.....	100	19	87	52	29	64	34	61	65	2.63	.....	8	7,278	s.	40	s.	1	16	12	3	4.1	.....	.....	.....	.....
Pierre	1,470	.....	28.41	29.91	.....	74.3	.....	97	11	86	52	3	63	34	60	66	1.43	.....	8	7,080	e.	42	n.	19	19	7	5	3.6	.....	.....	.....	.....
Huron	1,310	12	28.59	29.95	+ .01	69.6	- 2.6	93	11	81	46	29	58	35	60	72	1.51	- 2.4	5	10,148	se.	60	w.	20	9	20	2	4.3	74.4	1886	66.0	1882
Yankton	1,232	20	28.70	29.97	+ .04	74.3	- 0.1	101	20	85	49	29	64	31	61	67	1.60	- 2.2	4	6,304	se.	42	sw.	26	8	20	3	5.0	77.8	1874	69.4	1882
Northern Slope.																																
Havre	2,477	12	27.34	29.87	- .01	66.1	- 1.8	96	5	80	31	28	52	46	49	60	1.87	- 0.4	13	5,858	sw.	41	sw.	16	13	16	2	4.4	74.1	1886	63.9	1884
Miles City	2,374	.....	27.44	29.83	.....	73.7	.....	103	19	88	47	28	60	42	49	49	1.15	.....	7	4,641	nw.	3	sw.	11	23	5	3	2.5	.....	.....	.....	.....
Helena	4,118	13	25.83	29.93	+ .02	65.0	- 1.5	91	31	78	45	28	52	36	41	48	2.27	+ 1.3	13	5,707	sw.	54	sw.	4	16	11	4	3.6	70.6	1890	62.5	1884
Rapid City	3,280	7	26.64	29.89	+ .02	71.5	+ 0.4	101	22	84	49	29	59	35	52	54	0.67	- 1.2	7	6,980	nw.	47	sw.	17	10	17	4	5.1	74.5	1890	68.4	1891
Cheyenne	6,105	22	24.14	29.91	+ .02	67.2	- 1.2	93	19	80	45	1	54	39	49	61	0.90	- 0.9	7	5,396	nw.	38	nw.	2	7	21	3	4.9	70.5	1876	62.9	1875
Lander	5,377	.....	24.71	29.92	.....	66.3	.....	91	21	84	43	29	49	45	41	45	2.05	.....	4	3,901	sw.	40	s.	17	15	14	2	3.6	.....	.....	.....	.....
Kearney	2,173	.....	24.74	29.94	.....	73.2	.....	100	21	85	46	3	62	34	60	64	4.39	.....	6	7,900	s.	54	se.	1	15	11	5	3.9	.....	.....	.....	.....
North Platte	2,841	18	27.13	29.98	+ .04	72.8	- 1.2	102	20	86	47	28	60	44	59	69	3.50	+ 0.8	12	7,071	ne.	40	nw.	21	5	21	5	5.3	77.4	1890	69.7	1891
Middle Slope.																																
Denver	5,287	21	24.86	29.94	+ .07	71.9	- 0.9	97	19	85	49	28	59	36	46	49	1.19	- 0.5	14	5,417	sw.	40	ne.	2	5	20	6	5.5	75.3	1881	67.8	1875
Pikes Peak .....	.....	16	.....	.....	.....	75.0	.....	100	14	90	53	4	60	43	49	49	3.22	.....	13	5,459	nw.	44	se.	12	6	20	5	5.7	77.2	1888	35.1	1875
Pueblo	4,734	5	25.34	29.93																												

STATIONS OF THE WEATHER BUREAU.

Station.	Observer.	Station.	Observer.	Station.	Observer.
<i>First Order.*</i>					
Abilene, Tex.	Allen Buell.	Lexington, Ky.	V. E. Muncy.	Columbia, Tex.	J. F. Rogers.
Albany, N. Y.	A. F. Sims.	Little Rock, Ark.	F. H. Clarke.	Corsicana, Tex.	E. L. Gibson.
Alpena, Mich.	H. McP. Baldwin.	Los Angeles, Cal.	Geo. E. Franklin.	Cuero, Tex.	J. B. Brooks.
Augusta, Ga.	David Fisher.	Louisville, Ky.	Frank Burke.	Dallas, Tex.	H. P. Berry.
Atlanta, Ga.	Park Morrill.	Manchester, N. H.	J. H. Melton.	Hearne, Tex.	W. A. Snell.
Bismarck, N. Dak.	Wm. H. Fallon.	Meridian, Miss.	Geo. Hass Hagen.	Houston, Tex.	D. E. Saunders.
Boston, Mass.	J. W. Smith.	Miles City, Mont.	H. R. Boynton.	Huntsville, Tex.	W. Y. Barr.
Buffalo, N. Y.	D. Cuthbertson.	Mobile, Ala.	Jas. A. Barry.	Luling, Tex.	T. W. Crech.
Chicago, Ill.	Dr. H. C. Frankenfeld.	Montgomery, Ala.	Arthur E. Hackett.	Longview, Tex.	J. E. Fisher.
Cincinnati, Ohio.	Presley T. Jenkins.	Montrose, Colo.	P. J. Bolton.	Orange, Tex.	A. L. Harris.
Cleveland, Ohio.	W. B. Stockman.	New Haven, Conn.	H. J. Cox.	Tyler, Tex.	W. A. Hartel.
Columbus, Ohio.	C. M. Strong.	New London, Conn.	R. O. Lasenby.	Waco, Tex.	W. H. Godber.
Davenport, Iowa.	F. J. Wals.	Northfield, Vt.	Wm. Line.	Weatherford, Tex.	W. B. Slack.
Denver, Colo.	J. J. Gilligan.	North Platte, Nebr.	J. C. Piercy.	Little Rock, Ark. (center).	
Des Moines, Iowa.	Dr. Geo. M. Chappell.	Oklahoma, Okla. T.	Jas. I. Widmeyer.	Brinkley, Ark.	A. J. Hahn.
Detroit, Mich.	E. A. Evans.	Oswego, N. Y.	J. G. Linsley.	Forrest, Ark.	J. H. Bard.
Dodge City, Kansas.	Geo. T. Todd.	Palestine, Tex.	M. H. Perry.	Helena, Ark.	J. A. Goschen.
Duluth, Minn.	B. H. Bronson.	Parkersburg, W. Va.	W. W. Dent.	Malvern, Ark.	Jos. Coffin.
Eastport, Me.	D. C. Murphy.	Pensacola, Fla.	E. C. Easton.	Newport, Ark.	R. C. McMahon.
El Paso, Tex.	N. D. Lane.	Pierre, S. Dak.	W. A. Shaw.	Paris, Tex.	L. H. Paddock.
Galveston, Tex.	Dr. I. M. Cline.	Point Barrow, Alaska.	Capt. G. B. Borden.	Pine Bluff, Ark.	H. P. Holt.
Havre, Mont.	Chas. W. Ling.	Port Angeles, Wash.	Wm. Bell.	Prescott, Ark.	Wm. Friganza.
Helena, Mont.	E. J. Glass.	Port Huron, Mich.	Wm. M. Edmondson.	Russellville, Ark.	M. J. Nash.
Huron, S. Dak.	S. W. Glenn.	Portland, Me.	E. P. Jones.	Texarkana, Ark.	
Indianapolis, Ind.	C. F. R. Wappenhans.	Pueblo, Colo.	F. H. Brandenburg.	Memphis, Tenn. (center).	
Jacksonville, Fla.	E. R. Demain.	Raleigh, N. C.	C. F. von Herrmann.	Arlington, Tenn.	A. T. B. Etheridge.
Kansas City, Mo.	P. Connor.	Rapid City, S. Dak.	Wm. Norrington.	Batesville, Miss.	J. M. Cox.
Keeler, Cal.	H. E. Wilkinson.	Red Bluff, Cal.	John J. McLean.	Bolivar, Tenn.	W. F. McCarley.
Key West, Fla.	H. B. Boyer.	Red Wing, Minn.	F. T. Williams.	Brownsville, Tenn.	W. A. Roberts.
Knoxville, Tenn.	Henry Pennywitt.	Sacramento, Cal.	J. A. Barwick.	Corinth, Miss.	W. O. Henson.
Lynchburg, Va.	J. N. Ryker.	Saint Vincent, Minn.	H. W. Grasse.	Covington, Tenn.	W. N. White.
Manistee, Mich.	Louis Dorman.	San Antonio, Tex.	L. F. Passalaigne.	Decatur, Ala.	J. M. Vickray.
Marquette, Mich.	P. McDonough.	Sandusky, Ohio.	B. F. Hough.	Dyersburg, Tenn.	J. F. Pickett.
Memphis, Tenn.	W. M. Wilson.	Shreveport, La.	C. A. Smith.	Hernando, Miss.	L. M. Jones.
Milwaukee, Wis.	Willis L. Moore.	Sioux City, Iowa.	U. G. Pursell.	Holly Springs, Miss.	N. T. Bryant.
Moorhead, Minn.	S. G. Duffey.	Springfield, Ill.	John Craig.	Milan, Tenn.	O. F. Cantwell.
Nantucket, Mass.	B. A. Blundon.	Springfield, Mo.	T. S. Collins.	Tusculum, Ala.	John Lassetter.
Nashville, Tenn.	J. B. Marbury.	Stanton, Fort, N. Mex.	Mrs. M. H. Bailey.	Mobile, Ala. (center).	
New Orleans, La.	Geo. E. Hunt.	Stanthport, N. C.	S. L. Dasher.	Aberdeen, Miss.	O. L. McKay.
New York City.	E. B. Dunn.	Tatoosh Island, Wash.	Frank R. Beahan.	Columbus, Miss.	W. P. Hopkins.
Norfolk, Va.	A. J. Davis.	Titusville, Fla.	Jos. E. Lanouette.	Evergreen, Ala.	J. C. Middlebrooks.
Olympia, Wash.	Wm. Bell.	Tucson, Ariz.	Julius C. Hayden.	Livingston, Ala.	L. C. Marbury.
Omaha, Nebr.	S. S. Bassler.	Valentine, Nebr.	John Fitzgerald.	Macon, Miss.	S. J. Russell.
Philadelphia, Pa.	L. M. Dey.	Walla Walla, Wash.	Fitzhugh Newman.	Okolona, Miss.	J. Carmack.
Portland, Oregon.	B. S. Pague.	Wichita, Kans.	Dr. Fred. L. Johnson.	Thomasville, Ala.	W. R. McKinley.
Pittsburg, Pa.	O. D. Stewart.	Winnemucca, Nev.	Geo. D. Boutcher.	Waynesboro, Miss.	
Rochester, N. Y.	A. L. White.	Woods Holl, Mass.	J. P. Slaughter.	Montgomery, Ala. (center).	
Roseburg, Oregon.	Thos. Gibson.	Yankton, S. Dak.	Geo. W. Scott.	Eufaula, Ala.	C. C. Hanson.
Saint Louis, Mo.	W. H. Hammon.	<i>Third Order.†</i>		Fort Deposit, Ala.	W. L. Van Felt.
Saint Paul, Minn.	P. F. Lyons.	Astoria, Oregon.	John Grover.	Marion, Ala.	Ira J. Davis.
Salt Lake City, Utah.	Geo. N. Salisbury.	Auburn, Ala.	Prof. P. H. Mell.	Opelika, Ala.	W. L. Carmack.
Savannah, Ga.	P. H. Smyth.	Cape Henry, Va.	J. P. Sherry.	Pine Apple, Ala.	R. B. Raab.
Santa Fe, N. Mex.	H. B. Hersey.	Callam Bay, Wash.	R. S. Dummick.	Union Springs, Ala.	I. L. Daniel.
Sault Ste. Marie, Mich.	C. L. Bozell.	Columbia, Mo.	H. A. McNally.	<i>New Orleans, La. (center).</i>	
San Diego, Cal.	M. L. Hearne.	Columbia, S. C.	A. P. Butler.	Alexandria City, La.	L. C. Giffe.
San Francisco, Cal.	G. H. Willson.	Crete, Nebr.	G. A. Loveland.	Amite, La.	G. E. Manard.
Spokane, Wash.	Chas. Stewart.	Currituck Inlet, N. C.	John D. Blagden.	Brookhaven, Miss.	E. M. Bee.
Tampa, Fla.	Thomas J. Considine.	Escanaba, Mich.	J. C. Morrell.	Cheynayville, La.	W. W. Wall.
Toledo, Ohio.	E. A. Hanner.	Ithaca, N. Y.	R. M. Hardinge.	Coushatta, La.	L. M. Howard.
Vicksburg, Miss.	Wm. E. Butler.	Mico, Fla.	Hal. P. Hardin.	Hailehurst, Miss.	D. Fugitt.
Washington, D. C.	S. W. Beall.	Minneapolis, Minn.	John H. Harmon.	Lafayette, La.	J. J. Davidson.
Wilmington, N. C.	F. P. Chaffee.	Narragansett Pier, R. I.	Mrs. M. E. Conway.	Minden, La.	W. S. Hunt.
Yuma, Ariz.	A. Ashenberger.	Neah Bay, Wash.	Charles Adie.	Natchez, Miss.	C. Steitenroth.
		New Brunswick, N. J.	E. W. McGann.	Natchitoches, La.	J. H. Cosgrove.
		Point Reyes Light, Cal.	J. M. Klein.	Port Gibson, Miss.	H. H. Crisler.
		Port Crescent, Wash.	Otto B. Hart.	Savannah, Ga. (center).	
		Pyatt, Wash.	Homer Irvine.	Albany, Ga.	J. S. Clark.
		Topeka, Kans.	T. B. Jennings.	Alapaha, Ga.	F. B. Harris.
		University, Miss.	Prof. R. B. Fulton.	Americus, Ga.	L. A. Smith.
		Vineyard Haven, Mass.	W. W. Neifert.	Bainbridge, Ga.	E. W. Fleming.
		<i>Special Cotton Region Stations.‡</i>		Cordele, Ga.	H. W. Bayard.
		Atlanta, Ga. (center).		Eastman, Ga.	C. H. Peacock.
		Columbus, Ga.	John F. Lloyd.	Fort Gaines, Ga.	S. E. Lewis.
		Gainesville, Ga.	R. T. Murphy.	Gainesville, Fla.	James Bell.
		Greenville, S. C.	S. A. Crittenden.	Millen, Ga.	J. R. Sheppard.
		Griffin, Ga.	P. H. McDowell.	Quitman, Ga.	A. W. Thomas.
		Macon, Ga.	W. M. Craven.	Thomasville, Ga.	Robt. Thomas, Jr.
		Newnan, Ga.	Nora M. Avery.	Way Cross, Ga.	W. P. Whelphy.
		Spartanburg, S. C.	J. T. Gray.	Vicksburg, Miss. (center).	
		Toccoa, Ga.	J. K. Dickson.	Jackson, Miss.	H. S. Wright.
		West Point, Ga.	J. A. Erwin.	Lake, Miss.	W. A. Gilmore.
		Augusta, Ga. (center).		Monroe, La.	W. W. Renwick.
		Allendale, S. C.	C. B. Farmer.	Wilmington, N. C. (center).	
		Athens, Ga.	W. P. Briggs.	Cheraw, S. C.	W. R. Godfrey.
		Batesburg, S. C.	D. P. Hartley.	Florence, S. C.	P. H. Walsh.
		Blackville, S. C.	S. S. Turner.	Goldsboro, N. C.	Mrs. N. D. Thomas.
		Camak, Ga.	J. A. Chapman.	Greensboro, N. C.	G. W. Pritchett.
		Greenwood, S. C.	J. P. Edwards.	Lumberton, N. C.	B. M. Davis.
		Union Point, Ga.	R. F. Bryan.	Newbern, N. C.	W. G. Boyd.
		Washington, Ga.	I. D. Smith.	Weldon, N. C.	T. A. Clarke.
		Waynesboro, Ga.	H. W. Blount.	<i>Sugar and Rice Stations.‡</i>	
		Charleston, S. C. (center).		New Orleans, La. (center).	
		Green Pond, S. C.	W. J. Evans.	Baton Rouge, La.	H. A. Morgan.
		Hardeeville, S. C.	C. W. Hill.	Covington, La.	H. H. Smith.
		Kingsree, S. C.	W. G. Sease.	Donaldsonville, La.	W. D. Park.
		St. Georges, S. C.	J. S. Wannamaker.	Franklin, La.	E. M. Cornay.
		St. Matthews, S. C.	E. A. Sterling.	Lake Charles, La.	Wm. Meyer.
		Galveston, Tex. (center).	J. C. Sloan.	Opelousas, La.	E. J. Clements.
		Belton, Tex.		Rayne, La.	I. A. Smith.
		Brenham, Tex.		Schriever, La.	John T. Moore.

* Take two observations daily, and also record continuously important meteorological phenomena, such as wind-direction and velocity, precipitation, temperature, barometric pressure, etc., by means of self-registering instruments. † Take two observations daily. ‡ Take one observation, in addition to other special duties. § Take one observation daily from April 15 to November 30 each year, and telegraph it to district centers (regular Weather Bureau stations).

Form Map G-1891.

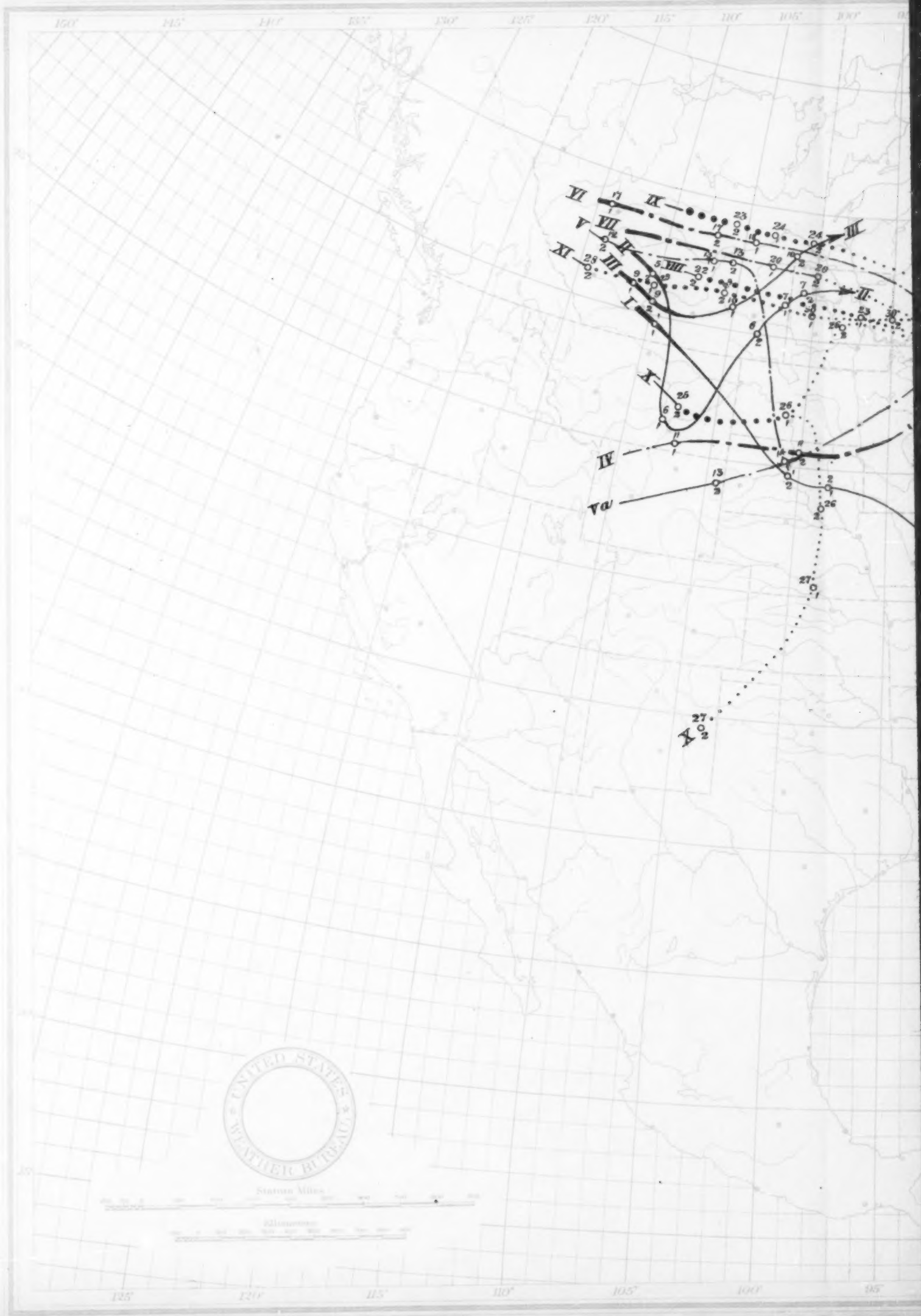


Chart I. Tracks of areas of Low Pressure. July, 1892.



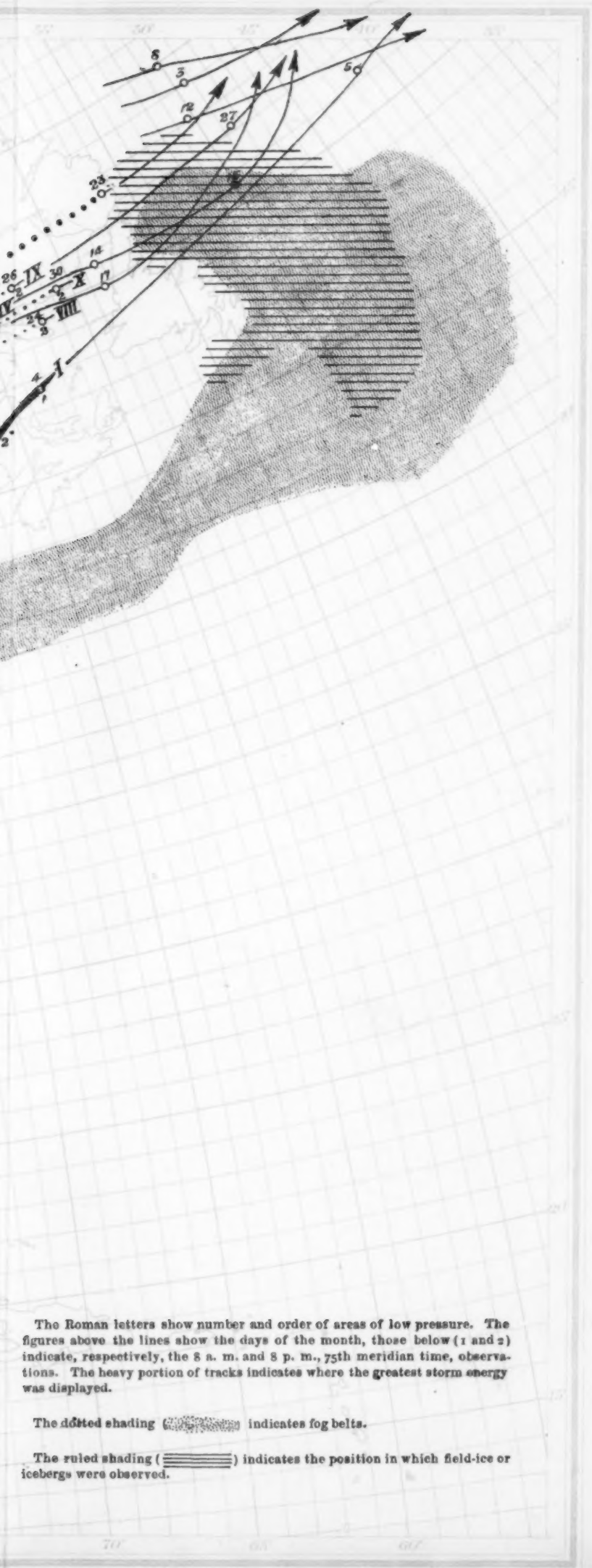


Chart II. Isobars, Isotherms, and Winds. July, 1892.

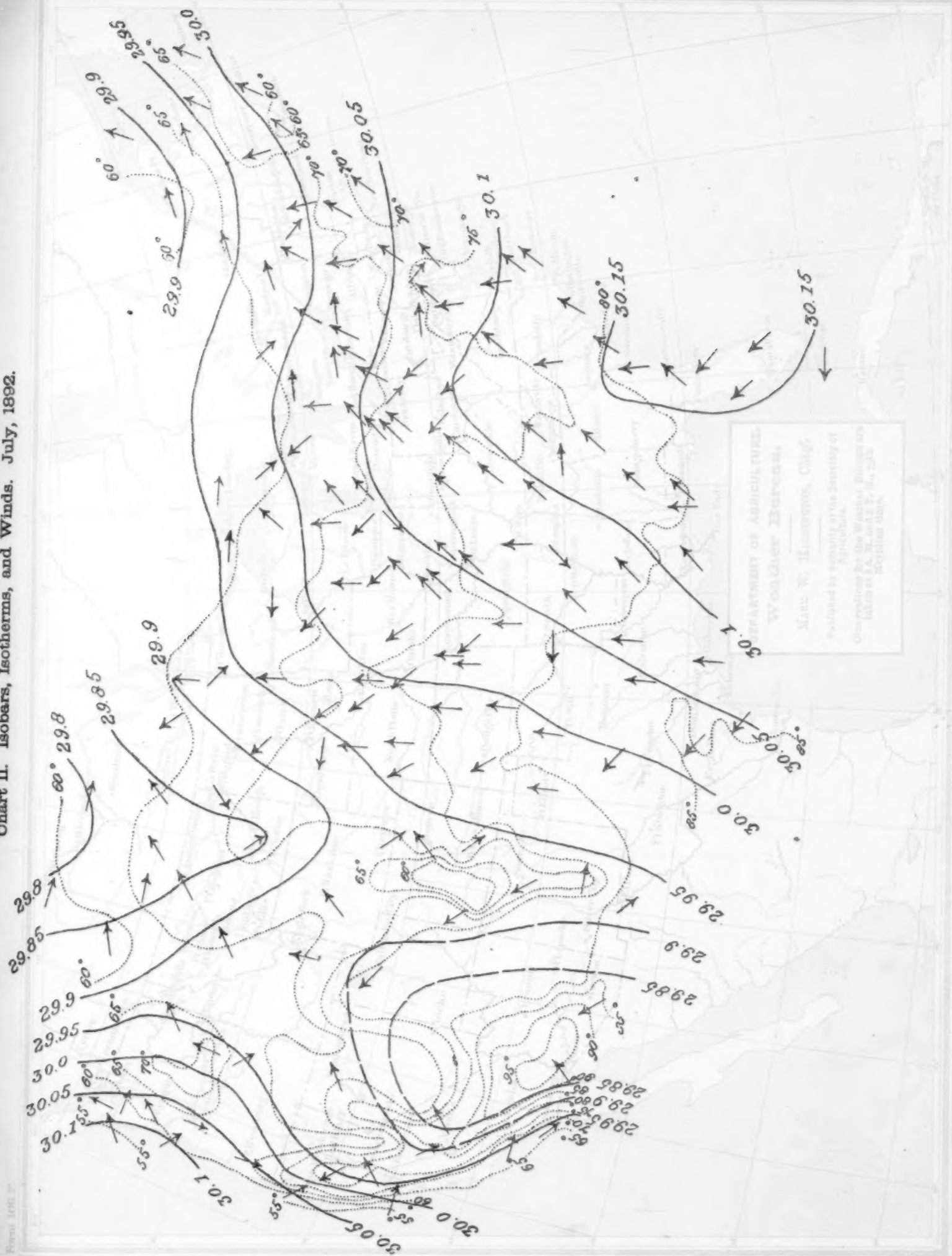
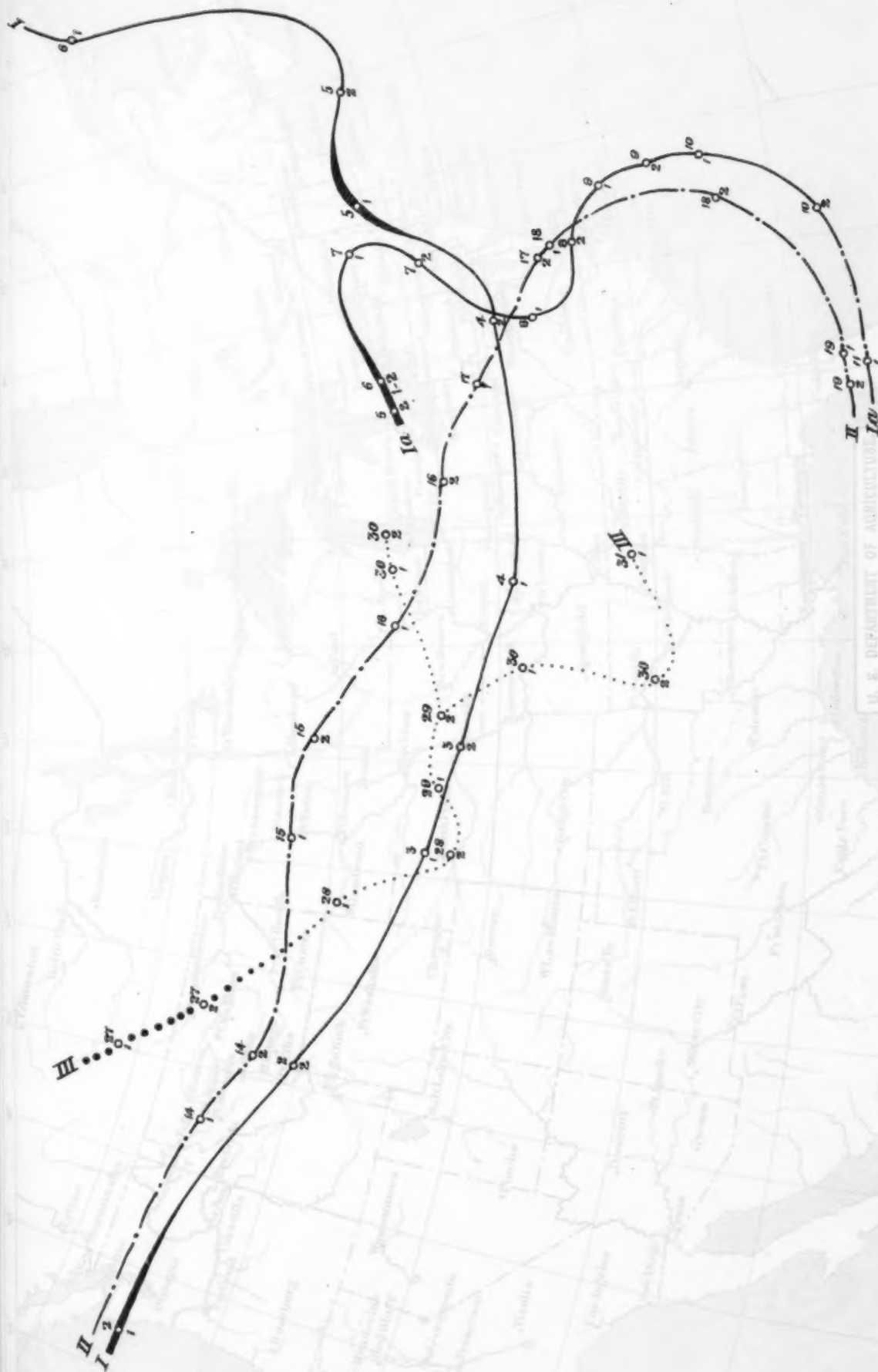


Chart III. Precipitation. July, 1892.



Chart IV. Tracks of areas of High Pressure. July, 1892.



U. S. DEPARTMENT OF AGRICULTURE
Weather Bureau.

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NOTES.

- Tracks of first decade of month.
- - - Tracks of second decade of month.
- Tracks from 21st to 31st, inclusive.

The heavy portion of tracks indicates where the highest pressure was observed.